Service Manual

LCD Monitor Acer
AL1917W

INNOLUX General

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Service Manual Versions and Revision

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Chapter 1- PRECAUTIONS & SAFETY NOTICES

1. SAFETY PRECAUTIONS

This monitor is manufactured and tested on a ground principle that a user's safety comes first. However, improper used or installation may cause damage to the monitor as well as to the user.

WARNINGS:

- This monitor should be operated only at the correct power sources indicated on the label on the rear of the monitor. If you're unsure of the power supply in you residence, consult your local dealer or Power Company.
- Do not try to repair the monitor by yourself, as it contains no user-serviceable parts. This monitor should only be repaired by a qualified technician.
- Do not remove the monitor cabinet. There are high-voltage parts inside that may cause electric shock to human bodies.
- Stop using the monitor if the cabinet is damaged. Have it checked by a service technician.
- Put your monitor only in a lean, cool, dry environment. If it gets wet, unplug the power cable immediately and consult your closed dealer.
- Always unplug the monitor before cleaning it. Clean the cabinet with a clean, dry cloth. Apply non-ammonia based cleaner onto the cloth, not directly onto the class screen.
- Do not place heavy objects on the monitor or power cord.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety visual inspections and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Before replacing any of these components read the parts list in this manual carefully. The use of substitute replacement parts, which do not have the same safety characteristics as specified in the parts list, may create shock, fire, or other hazards.

3. SERVICE NOTES

- When replacing parts or circuit boards, clamp the lead wires around terminals before soldering.
- Keep wires away from high voltage, high temperature components and sharp edges.
- Keep wires in their original position so as to reduce interference.
- Adjustment of this product please refers to the user' manual.

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Chapter 2- SERVICE TOOLS & EQUIPMENT REQUIRED

1. SIGNAL GENERATOR
2. MULTIMETER
3. SCREW DRIVER
4. OSCILLOSCOPE
5. Soldering IRON
6. SOLDER
7. VGA Cable (15pins point to point)
8. DVI Cable(DVI-D 24+1 pin)
9. Color Analyzer
10. Mstar ISP Board
11. EDID Board
12. EDID program file

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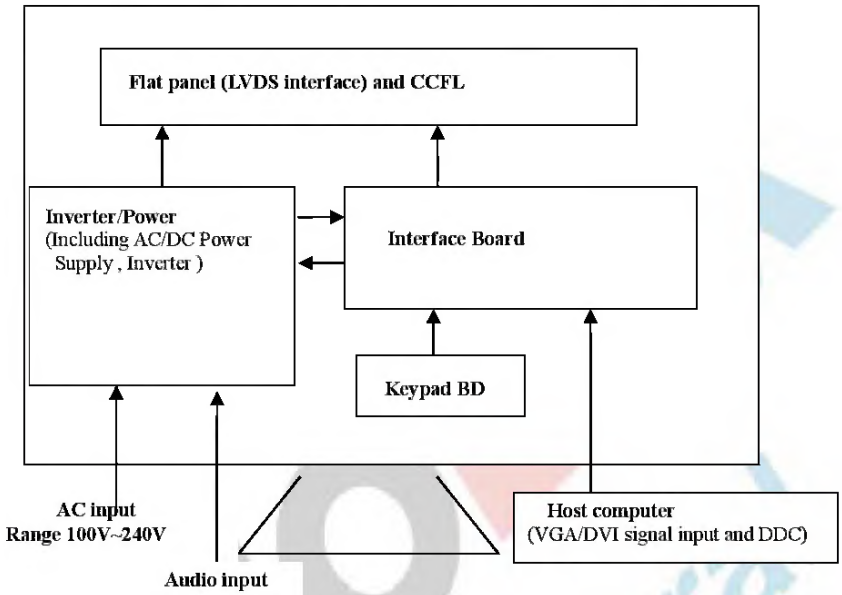
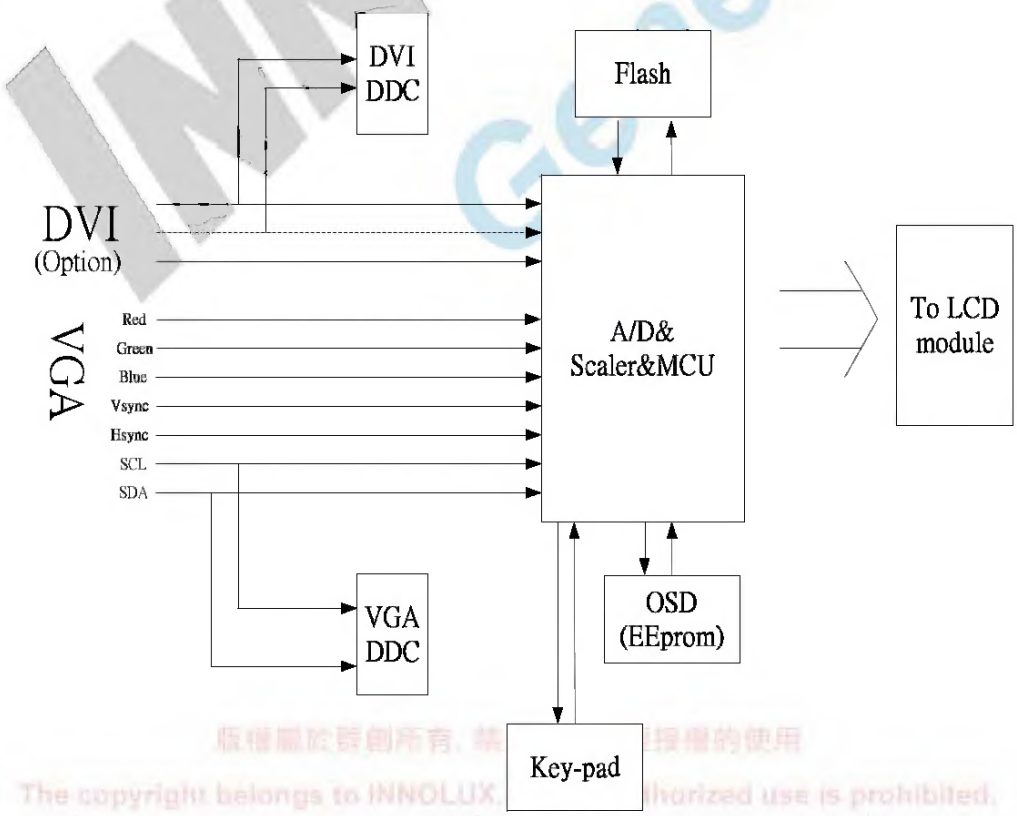
Chapter 3- CIRCUIT THEORY

1. Monitor Block Diagram

The LCD Monitor contains an interface board, and inverter/power/Audio board, keypad board and flat panel. In Inverter/power/Audio board, power section supplies +14V & +5V for Inverter/Audio and Interface board used. The inverter section drives the backlight of panel and the DC-DC conversion. The Audio section drives speaker (2 x1W).



2. Interface BOARD DIAGRAM



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3. Electronic Circuit Theory

3.1 Switching Mode Power Supply

3.1.1 AC Current Input Circuit

P801 is a connector for connecting AC Power. F801 is a fuse to protect all the circuit. AC input voltage is from 90v to 264V. R801 and R802 joined between two inputting main circuit to prevent man from shock. L801 is used to clear up low frequency wave. C801 and C802 are used to discharge the waves that L801 produced. High frequency waves are damped by C801 and C802. D801 is a rectifier which composed of 4 build-in diodes, it inverts AC to DC.

3.1.2 High Voltage to Low Voltage Control Circuit

C804 is used to smooth the wave from rectifier. IC802 is a highly integrated PWM controller. When rectified DC high voltage is applied to the HV pin during start-up, the MOSFET Q804 is initially off, and the Vcc pin capacitor is charged. When the Vcc pin voltage reaches approximately 10V, the control circuitry is activated and the soft-start begins. The soft-start circuit gradually increases the duty cycle of the MOSFET from zero to the maximum value over approximately 4ms. If no external feedback/supply current is fed into the FB pin by the end of the soft-start, the current Setpoint will be above the fault level, FAULT flag is raised, if the FAULT duration exceeds 80ms, the output controller disable

Resistor R808, R809, R810, R811 are for line over voltage shutdown(OVP)

When PWM is turned off, the main current flow will be consumed through R804 and D802, This will prevent MOSFET Q804 from being damaged under large current impulse and voltage spike.

D803 and C807 to provide internal Auxiliary voltage to Vcc pin during normal operation. Otherwise, error amplifier and feedback current input the FB pin for duty cycle control.

3.1.3 DC_5V and DC_14V Output Circuit

For DC 5V, D805 is used to rectify the inducted current. R828 and C814 are used to store energy when current is reversed. The parts including C818, C822, C820,L803 are used to smooth the current waves.

For DC 14V, D803 is used to rectify the inducted current. R827 and C813 are used to store energy when current is reversed. The parts including C815, C817 and L802 are used to smooth the current waves.

3.1.4 Feedback and OVP Protect Circuit

Pin R of IC803 is supplied 2.5-v stable voltage. It connects to 5V and 14V output through R822, R823 and R824. R822, R823 and R824 are output sampling resistor. When the sampling voltage more than 2.5V or less than 2.5V, current of FB IC802 will change, this can change the voltage from T801.

OVP Protect Circuit: When output is overvoltage, the auxiliary winding voltage will be increased, when it reaches about 14V. Q803 is triggered . It makes the IC802 Pin 1 exceed 5V, then the IC802 output will be disabled.

Q801, R816, R817 and ZD803 make up of dummy loading circuit. For start-up sequence, during 5V output take place high loading first, this dummy loading circuit operated to insure 14V not be increased.

3.2 I/F Board Circuit

3.2.1 RGB CAPTURE

- Signal RED,GREEN,BLUE input through CN103 #1,#2,#3, Stop DC via C112, C114 and C116, and then enter into U105 (scaler) analog input terminal #18,#20,#23, and then scaler deals with signal internally. TVS101, TVS102, TVS103 are ESD protector to prevent U105 from ESD.
- Signal DDC_SCL (series clock) inputs via CN103#15, and then passes through ZD101 Zener for ESD protection, goes into U105 #31.
- Signal DDC_SDA (series data) inputs via CN103#12, and then passes through ZD107 Zener for ESD protection, goes into U105 #30.
- Signal TTL vertical sync. (Vsync) inputs via CN103 #14, and then clamped by ZD105 Zener, passes through R129, and then goes into IC U105 (scaler) #28.

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- Signal TTL horizontal sync. (Hsync) inputs via CN103 #13, and then clamped byZD106 Zener, passes through FB101,R130, and then goes into IC U105 (scaler) #27.
- CN103#5 is defined as cable detect pin, this detector realize passes through R122 Pull hight, go into U105#35.
- U103 power is supplied by PC via CN103#9, or supplied by Monitor self via D103.
- U103 is an EEPROM IC which is memory and EDID data saved in it.

3.2.2 Buttons Control

- Button "Power" on right side bezel connects to U105 (scaler) #88 through R161, via CN105#4.
- Button "UP" "DOWN ""MENU" "AUTO" on right side bezel connects to U105 (scaler) #89,#88,#89,#88 through R158,R159,R160,R157,via CN105 #6, #5.
- U108 is an EEPROM IC which memory OSD setting and save the value adjusted by user.
- LED Indicator on Front Bezel
  a. When press button "power", U105 (scaler) #42 sends out a low potential, via R101, flow to CN105 #2 on keypad, LED Green ON.
  b. When in "Suspend" mode, U105 (TSUM56AL) #41 sends out a low potential, via R107, flows to CN105 #1 on keypad, LED Amber ON.

3.2.3 Mstar CHIP U105 (scaler)

- U105 (TSUM56AL-1& TSUM16AL-1) #54. #55. #58~#65 output 8 bit even LVDS digital data to panel control circuit through CN104.
- U105 (TSUM56AL) #67~#74. #77. #78 output 8 bit odd LVDS digital data to panel control circuit through CN104.
- U105 (TSUM56AL-1& TSUM16AL-1) #86 outputs Brightness "PWM" signals to control CCFL brightness.
- U105 (TSUM56AL-1& TSUM16AL-1) #48 output PPWR "H" potential to make Q103 conducted, and then make Q101 conducted, +5V flow to CN104#1~#3 as Panel VDD .
- U105 (TSUM56AL-1& TSUM16AL-1) #85 output CCFL_ON/OFF "H" potential to control Inverter on/off.
- TCLK by Crystal 14.318MHz input to U105 (TSUM56AL-1& TSUM16AL-1) #96,#97. Please refer to TSUM56AL Pin Assignments table in page

3.2.4 Regulator Circuit

- +5V is from switching mode power supply for Panel used.
- +3.3V generates from +5V through C101 and C103 filtering and U101 which is output +3.3V LDO for U103, U106,U108 and U105 used.
- +1.8V generates from +5V through C101 and C103 filtering and U102 which is output +1.8V LDO, for U105 used.

3.2.5 Audio circuit

- Audio Signal R,L,GND input through P701,#2,#5,#1, Stop DC via C711, C712, and then enter into U701 (TDA7496L) analog input terminal #4,#9.
- U701 (TDA7496L) #14,#17 output R,L audio data to Speaker through CN701.
- U105 (TSUM56AL) #94 output MUTE "H" potential to control U701on/off.
- U105 (TSUM56AL) #93 outputs Volume "PWM" signals to control U701 Volume.

4. Inverter circuit

1. R503, ZD501, R502, Q501 components convert +14V voltage into +5.0V voltage, and the voltage supply to IC501. The extra PWM pulse signal (BRIGHTNESS signal) input to control IC through R512, R514, C510, The LCT pin is set to a DC voltage of 0.7V by using a resistor divider(R507, R516), change the duty of PWM pulse, will regulate the lamp current. The ON/OFF voltage connect to pin10 of IC501 through D501, R501, A voltage of 2V to pin10 of IC501 enables the IC and activates the striking timer. The SSTCMP pin of IC501 performs the soft function, the C511 set the time of SST. The operation frequency determined by external capacitor C512, C521 and resistor R508 connected at CT pin of IC501. C515 connect the TIMER pin of IC501, the capacitor to set striking time and shunt down delay time. DRV!, DRV2 output

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for power MOSFET U501, U502.

2. OZ9938 provides two drive signals for U501, U502, and they work in push pull topology driving, two transformers are connected in parallel with each transformer driving two lamps in series. Turning each N-Channel MOSFET "on/off" complementarily, produces an alternating current through the transformer primary and secondary. The "on" duration of the switches determines the amount of energy delivered to the CCFLs. R504, C504, R505, C505, R532, C529, R530, C522 are snubber networks, they suppress Voltage transient spike in drain of power MOSFET.

3. R506, R510, C509, C513, C514, R525, R531, C528, C525, and C527 are connected between high voltage output connector and ground, the divided AC voltage is inverted DC voltage through D502, D503, D508, and D509. The sense voltage feed back to VSEN (pin 6 of IC501) for an over voltage/over current condition during normal operation. R528, R533 are current sense resistor, current sense signal feed back to Isense (pin 5 of IC501) for lamp "ON" detection.

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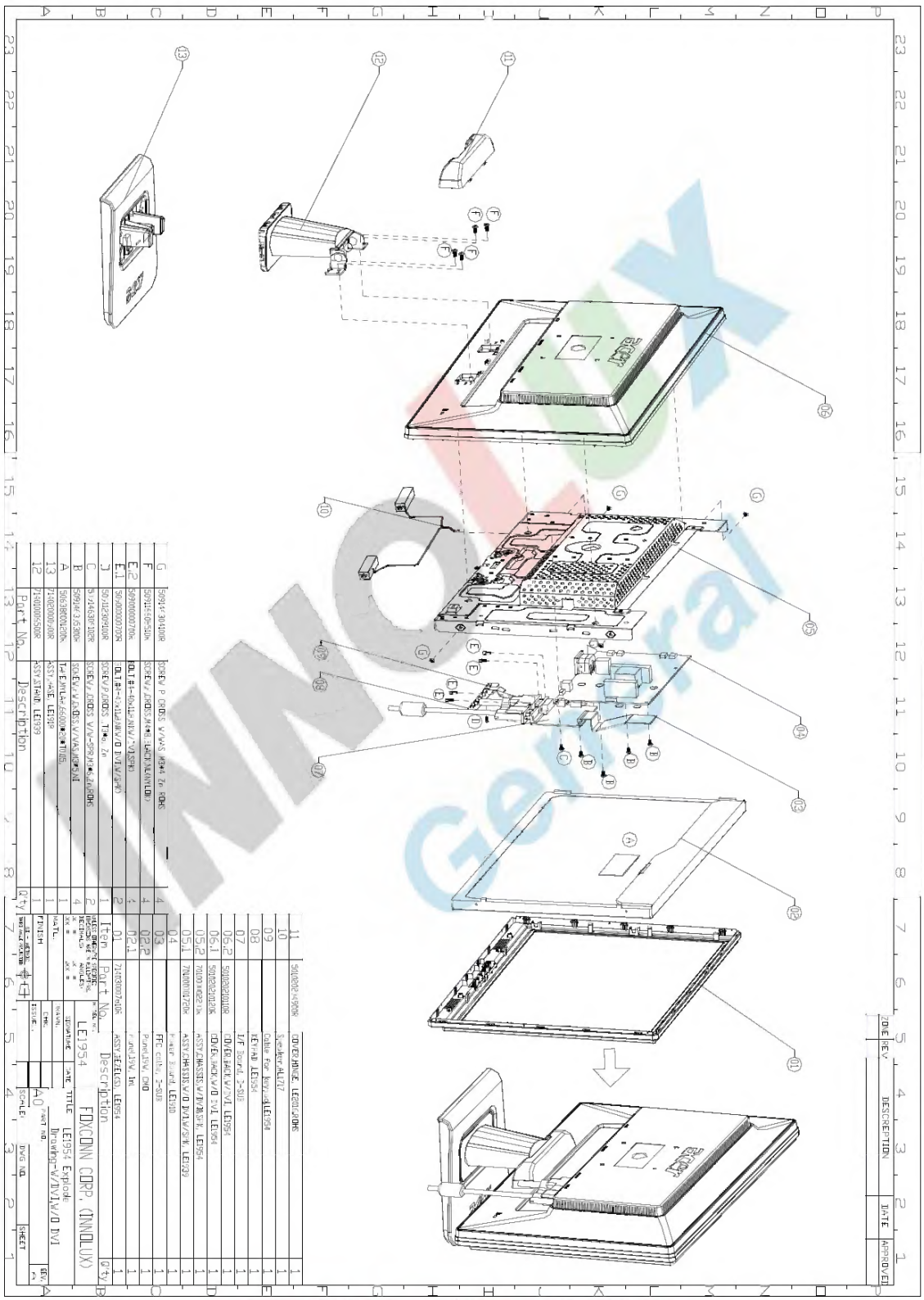
Chapter 4- Disassembly & Assembly

1. Exploded Diagram



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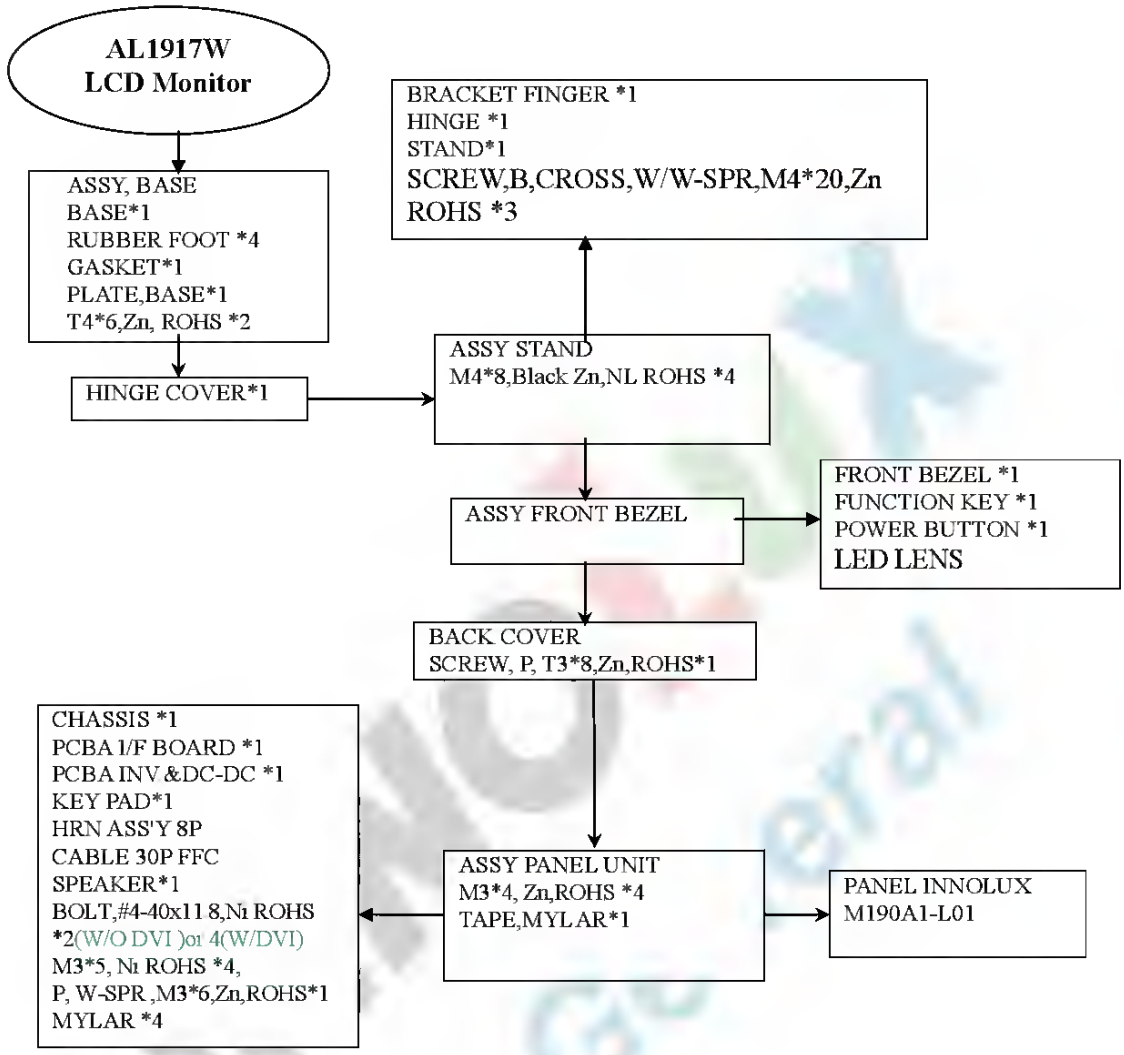
2. Disassembly Block



Note:

The DIS-assembly direction please following direction of arrowhead

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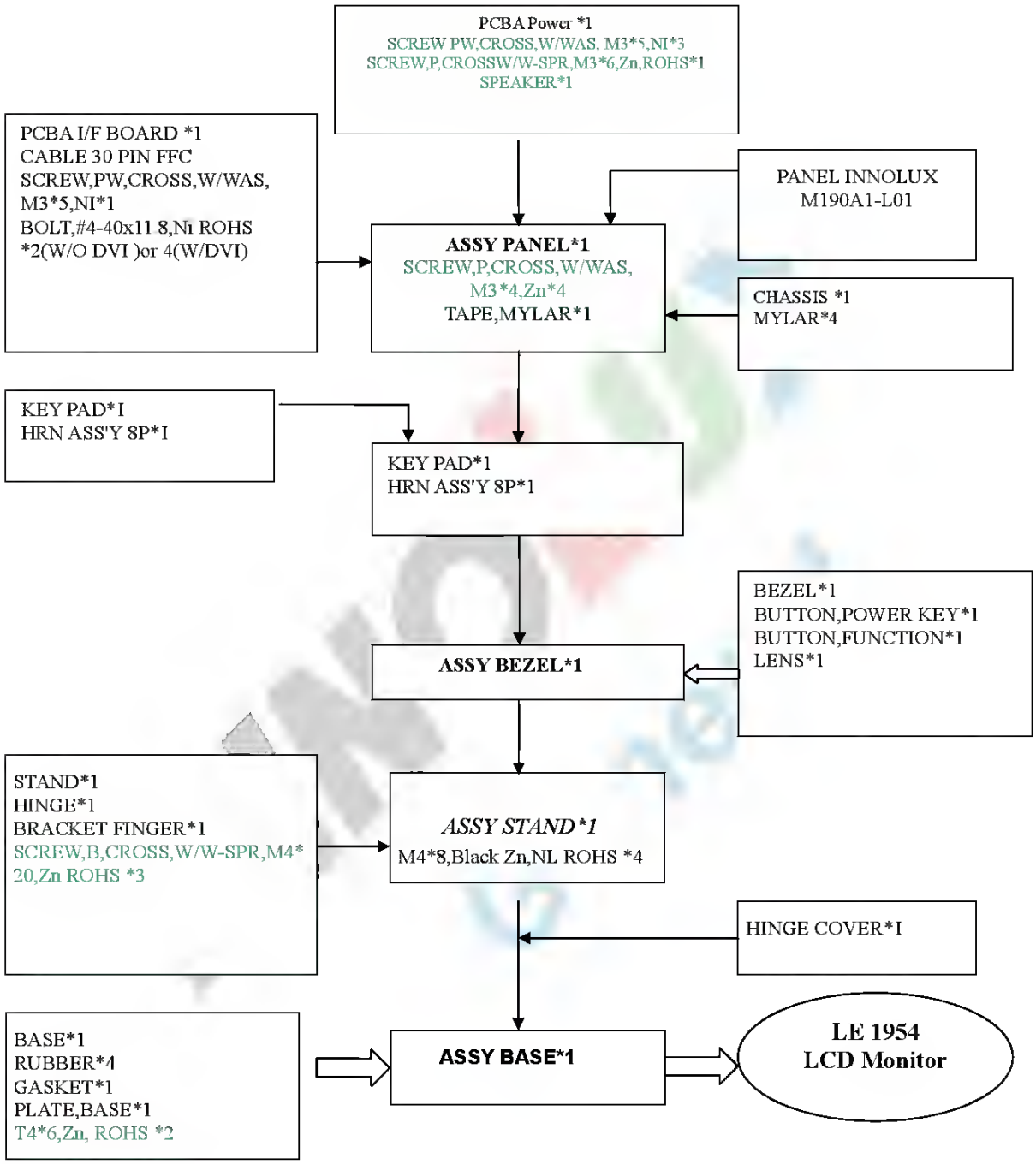
3. Assembly Block



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Chapter 5- TEST AND ADJUSTMENT

1. GENERAL POINTS

1.1 Test Equipment or Tool

1.1.1 Test pattern generator: PC or video pattern generator (Chroma-2326/2160/2130)
1.1.2 Color analyzer: Chroma-7120
1.1.3 Power meter: AC Source Chroma-6408
1.1.4 Electrical safety tester: Chroma (Zentech) 9032A
1.1.5 Stereo source: Music or signal generator input
1.1.6 Auto shock fixture
1.1.7 Temperature and humidity sensor
1.1.8 DDC interface card and EDID file

1.2 Preset Test Pattern

1.2.1 Crosshatch (General-1)
1.2.2 Gray Bar (16 & 32 levels)
1.2.3 Full White
1.2.4 Aging (Burn-in) Pattern: Full Red, Green, Blue, White, and Black

1.3 AC input

All measurements mentioned hereafter are carried out at a normal mains voltage (90 - 264 V_{AC} for the model with full range power supply, unless otherwise stated)

1.4 Observation Distance

1.4.1 Observation distance from eyes to panel is defined as 50cm
1.4.2 Visual distance from instrument to panel is defined as 20cm

1.5 Key Function Description

1.5.1 Control buttons on the front bezel

CONTROL KEY	KEYS FUNCTION
[AUTO]	A. When OSD un-displays, press [AUTO] to perform auto-adjustment B. When OSD displays, press [AUTO] to return to previous level menu
[MENU]	A. When OSD isn't shown on screen, press [MENU] to enter OSD interface B. When OSD displays, press [MENU] to perform function of menu icon that is highlight or enter next level menu
[►], [◄]	A. When "MENU OSD" displays, press these keys to change the contents of an adjustment item, or change an adjustment value B. When "MENU OSD" un-displays, press [►],adjust volume high; press [◄]adjust volume low
[POWER]	Power on or power off the monitor

1.5.2 Hot Key Operation

FUNCTION	HOT KEY OPERATION					DESCRIPTION
	AUTO	◄	►	MENU	POWER	
FACTORY MODE	•			•	ON	Press [AUTO] & [MENU] at the same time, and then press [POWER] for DC power on. OSD menu will be shown with "F" on the left top. Select "F" for entering factory mode.

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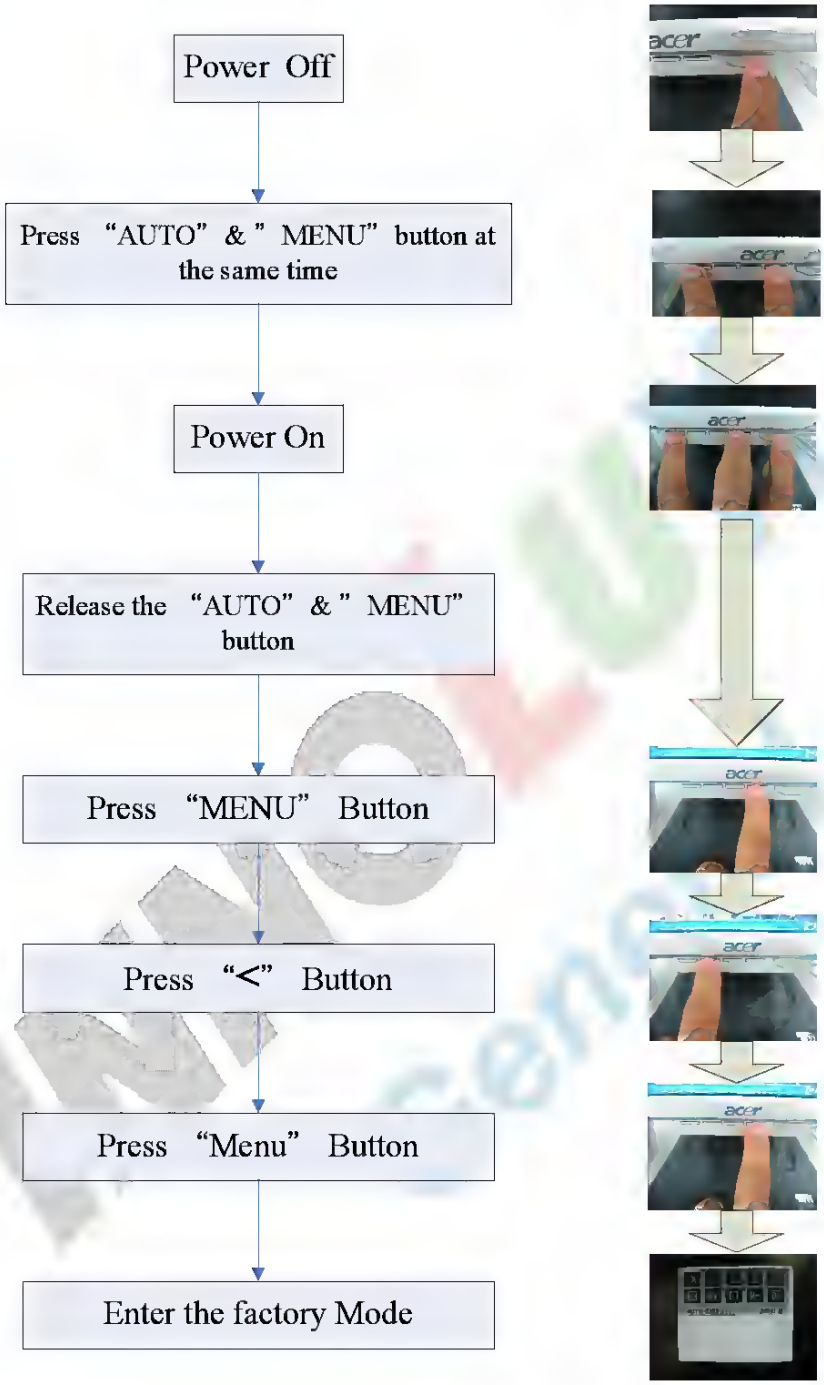
1.5.3 Process To Access Factory Mode



1.6 Burn-in (Aging) Pattern

1.6.1 Burn-in patterns are: full Red, Green, Blue, White and Black
1.6.2 Stop burn-in pattern by providing with video signal from D-sub or DVI-D connector

1.7 Warm Up

All test units have to be done warm up after at least 2 hours in a room with temperature of 40±5°C. (Except particular requirement)

2. INPUT SIGNAL

2.1 Video Signal Input

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2.1.1 VESA Analog

The video input consists of red, green, and blue signals. The video signals are analog levels, where 0V corresponds to black and 700mV is the maximum signal amplitude. Input impedance of video pins is 75 ohm ±1%.

Sync signal input

The capability of sync signal inputs shall include separate sync. Input impedance: 2k2 ohms the signals are defined as follow:

Separate sync TTL level, Positive/Negative

2.1.2 Input signal mode

PRESET TEST MODE TIMING

Resolution	H-Freq. (kHz)	V-Freq. (Hz)	Dot Clock (MHz)	Mode
640 x 480	31.5	60.0	25.175	VESA Standard
	37.9	72.0	31.500	
	37.5	75.0	31.500	
800 x 600	35.1	56.0	36.000	
	37.9	60.0	40.000	
	48.1	72.0	50.000	
	46.9	75.0	49.500	
1024 x 768	48.4	60.0	65.000	
	56.5	70.0	75.000	
	60.0	75.0	78.750	
1152 x 864	67.5	75.0	108.000	
1280 x 960	60.0	60.0	108.000	
1280 x 1024	64.0	60.0	108.000	
	80.0	75.0	135.000	
1440 x 900	55.9	60.0	106.500	
	75.0	75.0	136.750	
720 x 400	31.5	70.0	28.300	US Text
640 x 480	35.0	66.7	30.200	Power Macintosh series
832 x 624	49.7	74.6	57.300	
1024 x 768	60.2	75.0	80.000	
1152 x 870	68.7	75.0	100.000	
1280 x 1024	64.0	60.0	108.000	
	80.0	75.0	135.000	
1024 x 768	48.3	60.0	64.130	Sun Ultra series
	53.6	66.0	70.400	
	56.6	70.0	74.250	
1152 x 900	61.8	66.0	94.880	
1280 x 1024	71.7	67.2	117.010	
	81.1	76.0	134.990	
1280 x 800	49.7	60.0		Industrial Standard
	58.4	70.0		
	60.2	72.0		
	62.7	75.0		

2.1.3 VGA signal cable

15 pin D-sub VGA connector of signal cable.

2.1.4 Interface

Analog signal: The input signals are applied to display through D-sub cable.

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Length: 1.8 m +/- 50 mm (fixed)
Connector type: D-sub male.
With DDC_2B pin assignments.
Blue connector thumb-operated jack screws

Pin Assignment:

PIN No.	SIGNAL	PIN No.	SIGNAL
1	Red video input	9	VGA +5V
2	Green video input	10	GND
3	Blue video input	11	GND
4	GND	12	Serial data line (SDA)
5	Cable detect	13	H. Sync / H+V
6	Red video GND	14	V. Sync
7	Green video GND	15	Data clock line (SCL)
8	Blue video GND		

3. FUNCTION CHECK

3.1 OSD Function Test

3.1.1 Test mode: 1440x900 @ 60 Hz
3.1.2 Test pattern: pattern #1 of crosshatch (GENERAL-1)
3.1.3 Check single key function and hot key function about key "Power", "Menu"," ►", "◄ ", "Exit/Auto", it should operate normally

3.2 Screen Picture Check

3.2.1 Test mode: 1440x900 @ 60 Hz
3.2.2 Test pattern: pattern #1 of crosshatch (GENERAL-1)
3.2.3 Select OSD menu to execute 'Auto' function, screen picture shouldn't appear abnormal phenomenon and picture on screen should fit in with active display screen.

3.3 Auto Color Balance

3.3.1 Test mode: 640x480 @ 60 Hz
3.3.2 Test pattern: pattern #42 of 5-MOSAIC
3.3.3 Enter "Factory Mode" pressing "Auto color" key, and execute "AUTO".

3.4 Timing Check

3.4.1 Test mode: Refer to preset timing table and power saving mode
3.4.2 Test pattern: pattern #1 of crosshatch (GENERAL-1)
3.4.3 After change above timing and execute "Auto" function automatically, picture should fit in with active display screen.
3.4.4 Under power saving mode, LED lamp on the key board should be orange

3.5 Power Consumption Function Test

3.5.1 Test mode: 1440x900 @ 60 Hz
3.5.2 Test pattern: pattern #11 of "BLACK"
3.5.3 Adjusting both brightness and contrast value to maximum,
3.5.4 Measure power consumption as the following

Status	Power Consumption	LED Display
Normal	< 42W(with audio)	Green
Standby (No H/V	< 1W	Amber

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sync)		
Power off	< 1W	No display

3.6 VGA Cable Detect Test

If VGA cable of LCD monitor isn't connected to video pattern generator or PC, "NO SIGNAL" should be shown on screen.

3.7 Hi-Pot test

Test condition:

a. high voltage 2.3KV(DC)
b. leakage current 10mA
c. rising time 1 sec.
d. test time 3 sec.

3.8 Grounding Test

Test condition:

a. test current 30A / 2 sec
b. impedance < 0.1Ω

3.9 Bumping Test

3.9.1 Test mode: 1440x900 @ 60 Hz;

3.9.2 Test pattern: pattern #1 of crosshatch (GENERAL-1)

3.9.3 To shock LCD monitor lightly at the center of rear cover and edges with 1~2kg/cm2 force for three times, no abnormal phenomenon is found on panel screen.

4. DISPLAY CHECK

4.1 Panel Flicker Check

Connect LCD monitor to PC, set LCD monitor to be timing of 1440x900@60 Hz, adjust brightness to be default value (brightness at maximum), execute "Auto" function, and then check picture of shut down under windows 98 operating system, or flicker-pattern of pixel on-off. It should be that no flicker be found on panel screen.

4.2 Panel Defect Inspection

4.2.1 Test mode: 1440 x 900@60Hz

4.2.2 Test pattern: Crosshatch/Full white/Red/Green/Blue/Black/16 color bar/64 gray bars

4.2.3 Display quality must be (according to DIN 13406-2 pixel fault class II)

Defect Type	Specification	Major	Minor
Bright dot defect	THD		•
Dark dot defect	THD		•
Total bright and dark dots	THD		•
Bright Dots – 2 Adjacent B	THD		•
Bright Dots – 3 or more Adjacent	THD		•
Black Dots – 2 Adjacent B	THD		•
Black Dots – 3 or more Adjacent	THD		•
Distance between defect dots	THD		•
Distance between Dark dots	THD		•

Note 1: Dot defect is defined as the defective area is not larger than 50% of the dot area. Bright Dot is defined 5% transmission ND filter.

Note 2: Light Leakage: There shall not be visible light around the customer's bezel after assembly in normal View angle.

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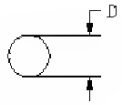
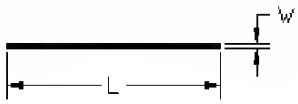
Defect Type		Specification Size	Count (N)	Majo	Minor
Dot Shape(Particle、Scratch and Bubbles in Display area or on The Polarizer) 		Black spots which appear when B/L operating 0.15mm ≤ D ≤ 0. 5 mm	N ≤ 3		●
Line Shape (Particles、Scratch、Fiber and Bubbles in display area or on The Polarizer) 		L ≤ 0.5mm and W ≤ 0.05 mm	Ignored		●
		0.5mm < L ≤ 5mm and 0.05mm < W ≤ 0.1mm	N ≤4		
		L > 5mm or W > 0.1mm	N = 0		
Display non-uniformity		There should be non-uniformity through 5% transparency of filter or judge by limit sample if necessary.			●
Bezel	Scratch	No harm			●
	Dirt				●
	Wrap	No harm			●
	Sunken	No harm			●
Label	No label	No			●
	Invert label				●
	Broken				●
	Dirt	Word can be read.			●
	Not clear				●
	Word out of				●
	Mistake	No			●
	Position	Be attached on right position			●
Screw	Not enough	No			●
	Limp	No			●
Connecto	Connection	No bend on pins and damage			●
FPC/FFC	Broken	No			●

5. PICTURE CHECK

5.1 Check brightness uniformity

5.1.1 Test mode: 1440x900 @ 60 Hz
5.1.2 Test pattern: pattern #41 of "WHITE"
5.1.3 Test tool: Color Analyzer Chroma7120

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5.1.4 Set brightness and contrast to be maximum, apply pattern as Fig.3, it should be the following requirement:

$$\frac{\text{Min. luminance of nine points (backlight)}}{\text{Max. luminance of nine points (backlight)}} = 75\%$$

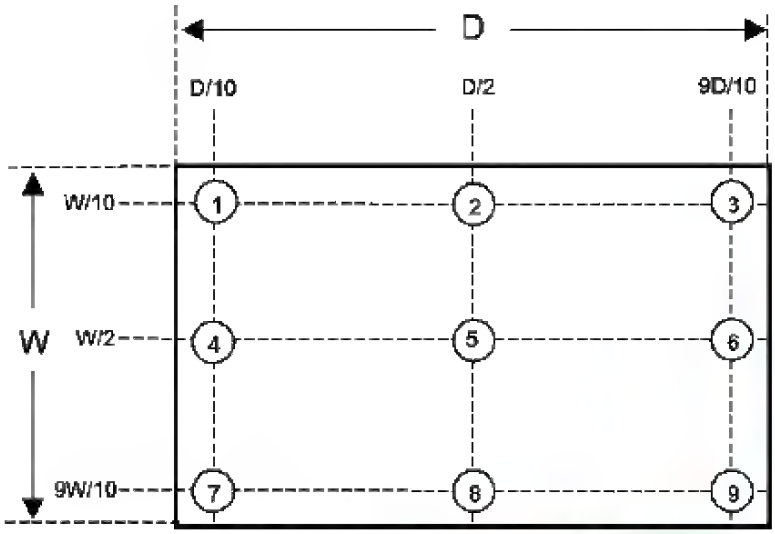

Fig. 3

5.2 Color Temperature Check

5.2.1 Test mode: 1440x900 @ 60 Hz

5.2.2 Test pattern: pattern #41 of "WHITE"

5.2.3 Test tool: Color Analyzer Chroma7120

5.2.4 Set brightness to be maximum and contrast to be 50%, measure color coordinate and luminance by color analyzer as the following:

Mode	Chromaticity Coordinate	
	x	y
9300K	0.283 ± 0.030	0.298 ± 0.030
USER	/	/
6500K	0.313 ± 0.030	0.329 ± 0.030

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5.3 Brightness Out (Video signal input 700mV ± 2%)

5.3.1 Test mode: 1440x900 @ 60 Hz

5.3.2 Test pattern: pattern #41 of "WHITE"

5.3.3 Test tool: Color Analyzer Chroma7120

Set brightness and contrast to be maximum with white pattern, to measure the screen center, the light output shall be >= BL cd/m^2

Mode	BL (cd/cm^2)	Remark
MT190AW01 V0	300	TYP

5.4 DDC Data Check

5.4.1 EDID program

5.4.2 Execute main program for EDID writing (refer to model type), using scanner for barcode download.

5.4.3 If writing EEPROM is successful, and then shows text "PASS" on screen; if writing EEPROM is failure, then shows text "FAIL".

5.4.4 EDID data: (For example)

AL1917W DVI EDID table:

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	00	FF	FF	FF	FF	FF	FF	00	04	72	87	AD	00	00	00	00
1	01	10	01	03	80	29	1A	78	E8	9A	E5	A6	58	49	99	23
2	11	50	54	BF	EF	80	90	4F	95	0F	81	80	81	40	81	0F
3	81	00	71	90	71	4F	C4	22	A0	A0	50	84	1A	30	30	20
4	36	00	9A	01	11	00	00	1E	00	00	00	FD	00	38	4C	1F
5	54	0E	00	0A	20	20	20	20	20	20	00	00	00	FF	00	30
6	30	30	30	30	30	30	30	30	30	30	30	0A	00	00	00	FC
7	00	41	4C	31	39	31	37	57	0A	20	20	20	20	20	00	CS

AL1917W VGA EDID table:

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	00	FF	FF	FF	FF	FF	FF	00	04	72	87	AD	00	00	00	00
1	01	10	01	03	08	29	1A	78	E8	9A	E5	A6	58	49	99	23
2	11	50	54	BF	EF	80	90	4F	95	0F	81	80	81	40	81	0F
3	81	00	71	90	71	4F	C4	22	A0	A0	50	84	1A	30	30	20
4	36	00	9A	01	11	00	00	1E	00	00	00	FD	00	38	4C	1F
5	54	0E	00	0A	20	20	20	20	20	20	00	00	00	FF	00	30
6	30	30	30	30	30	30	30	30	30	30	30	0A	00	00	00	FC
7	00	41	4C	31	39	31	37	57	0A	20	20	20	20	20	00	CS

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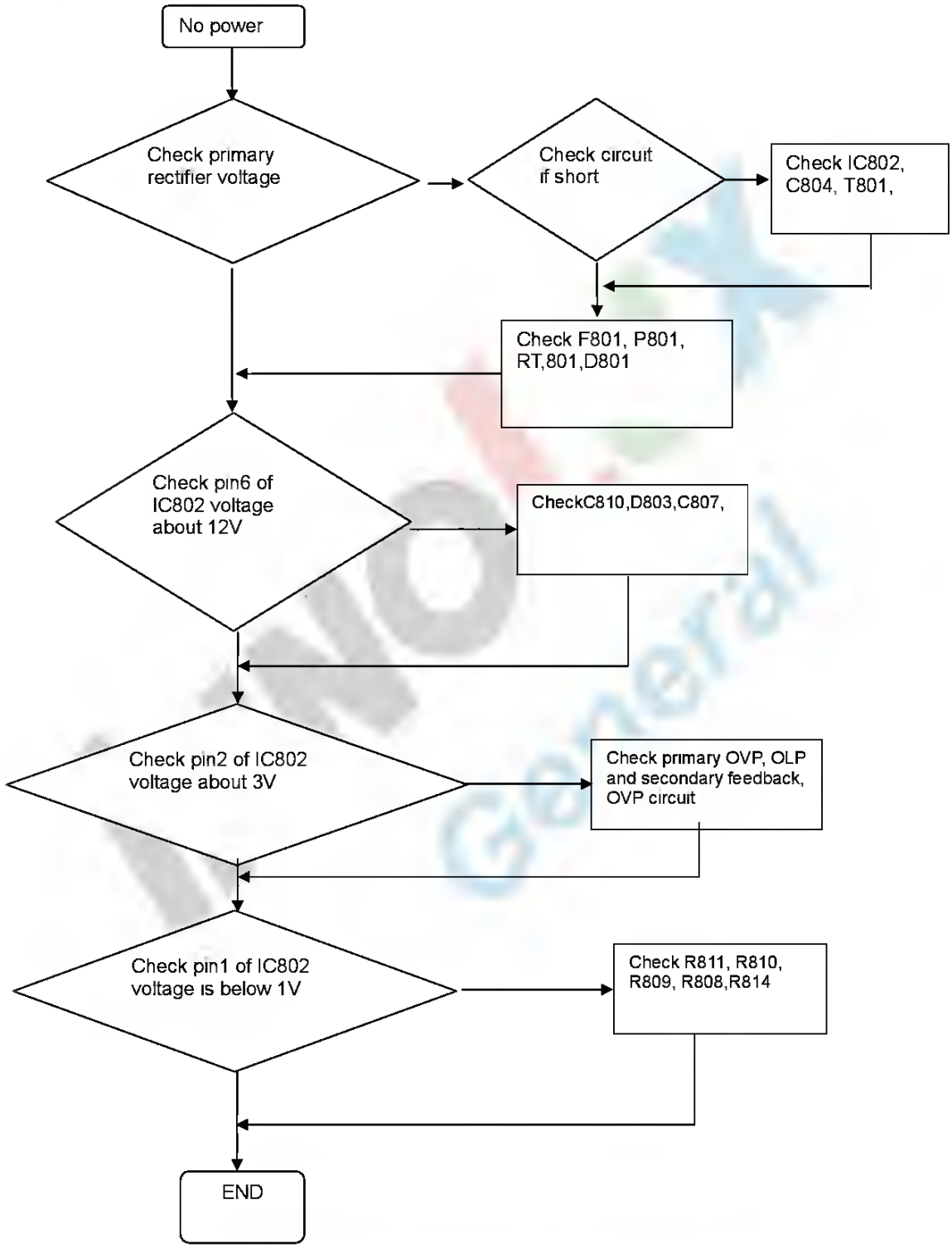
Chapter 6- TROUBLE SHOOTING

1. No Power & LED Off



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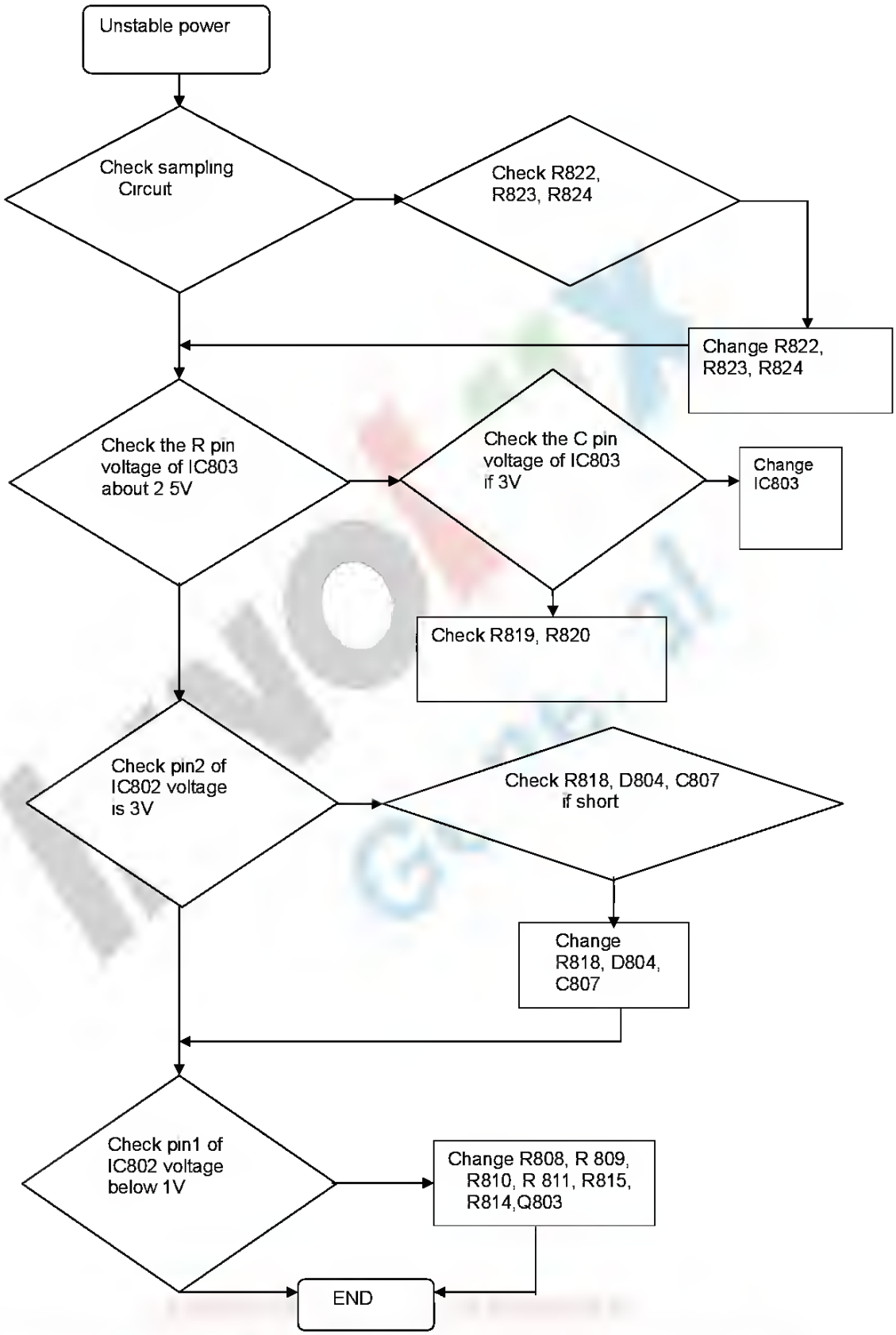
2. Unstable Power



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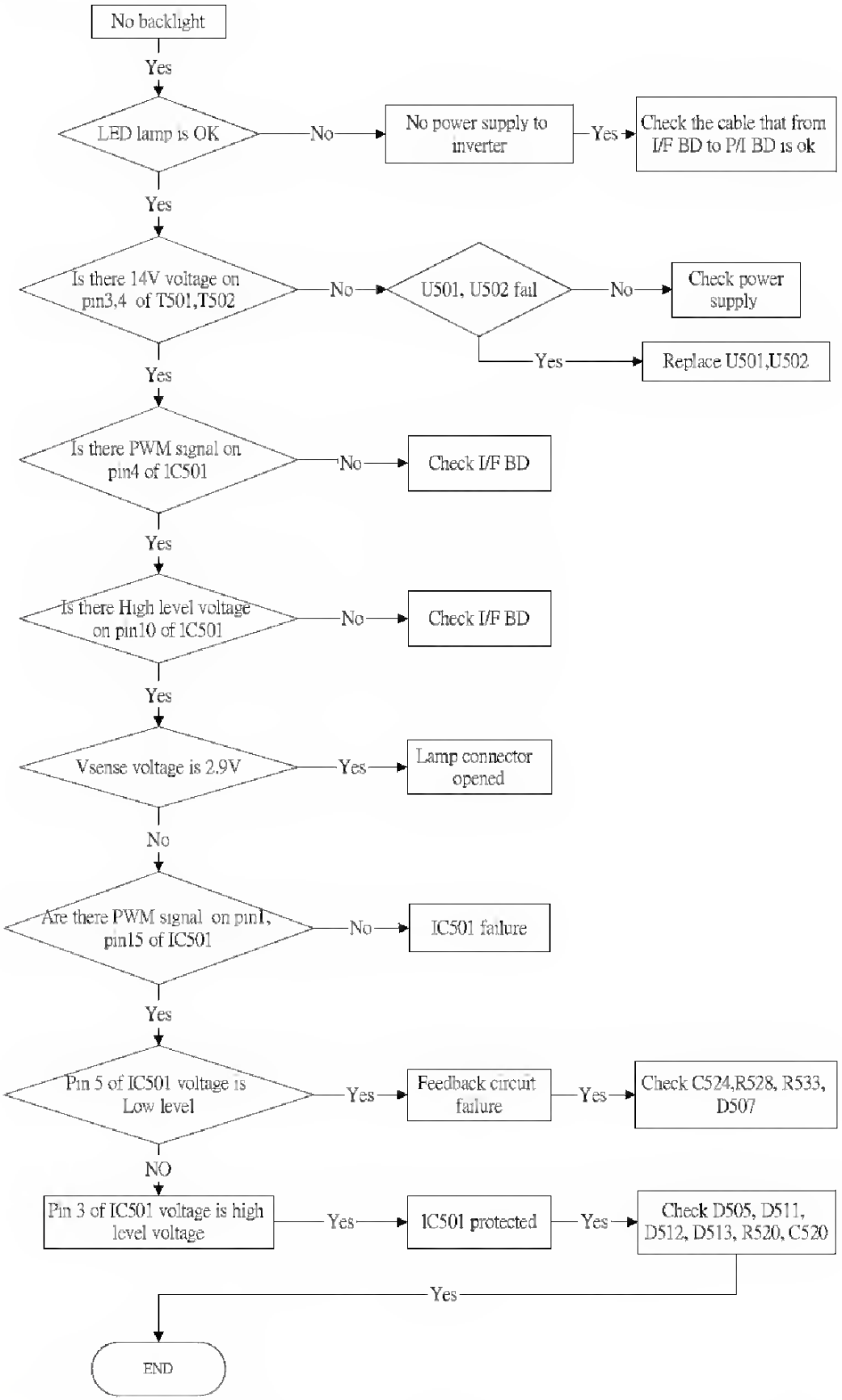
3. No raster



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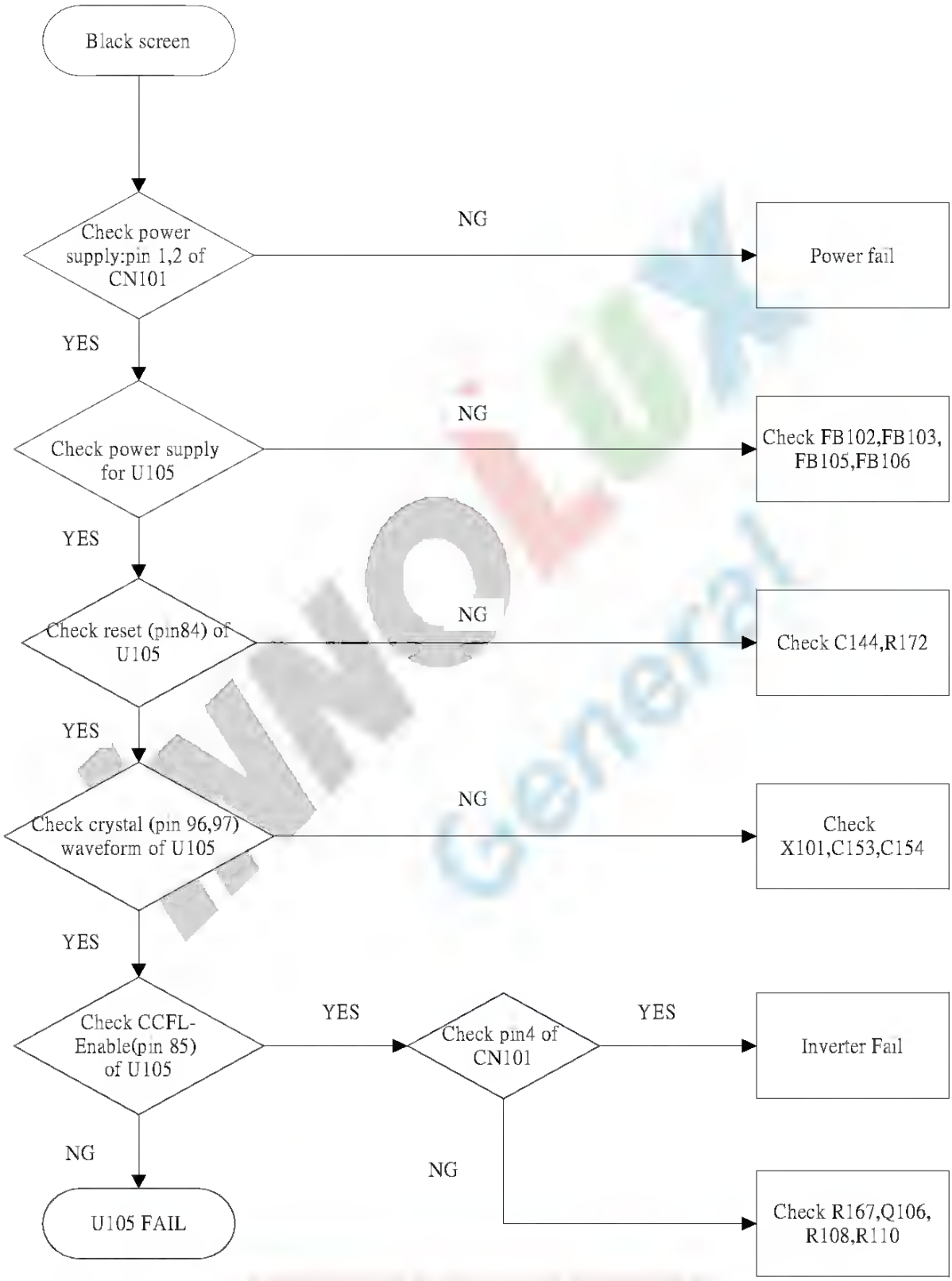
4. Black screen



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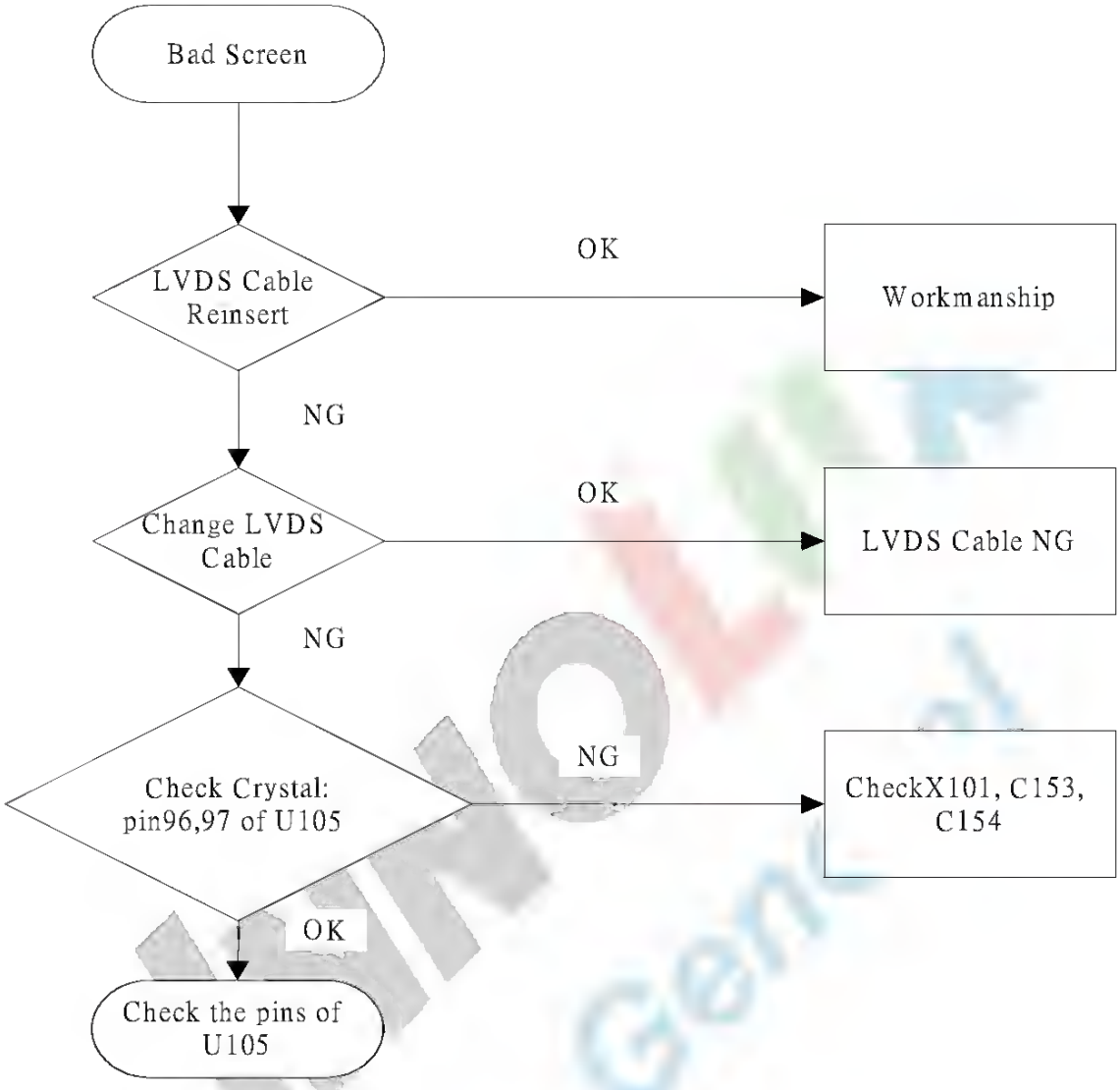
5. Bad Screen



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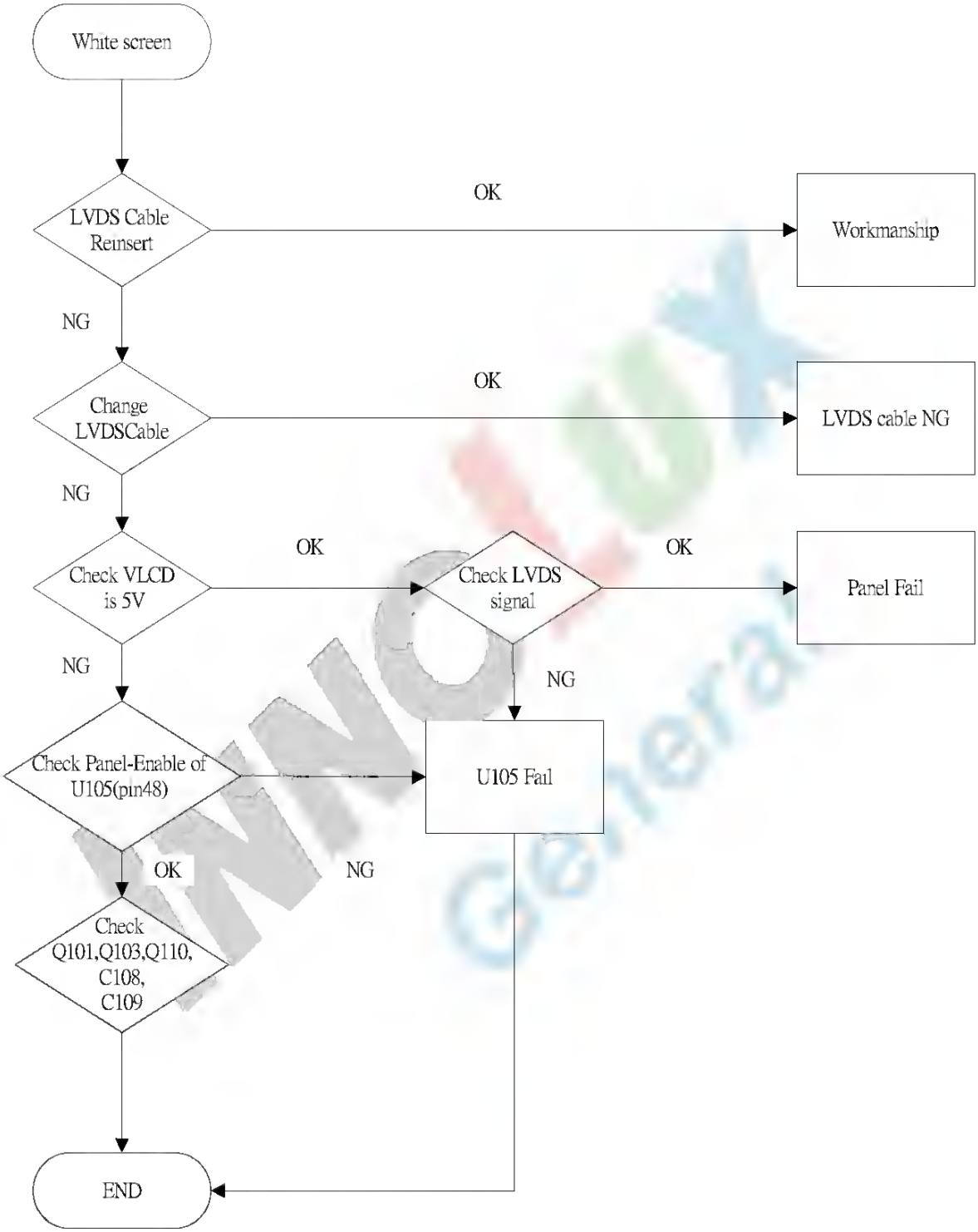
6. White screen



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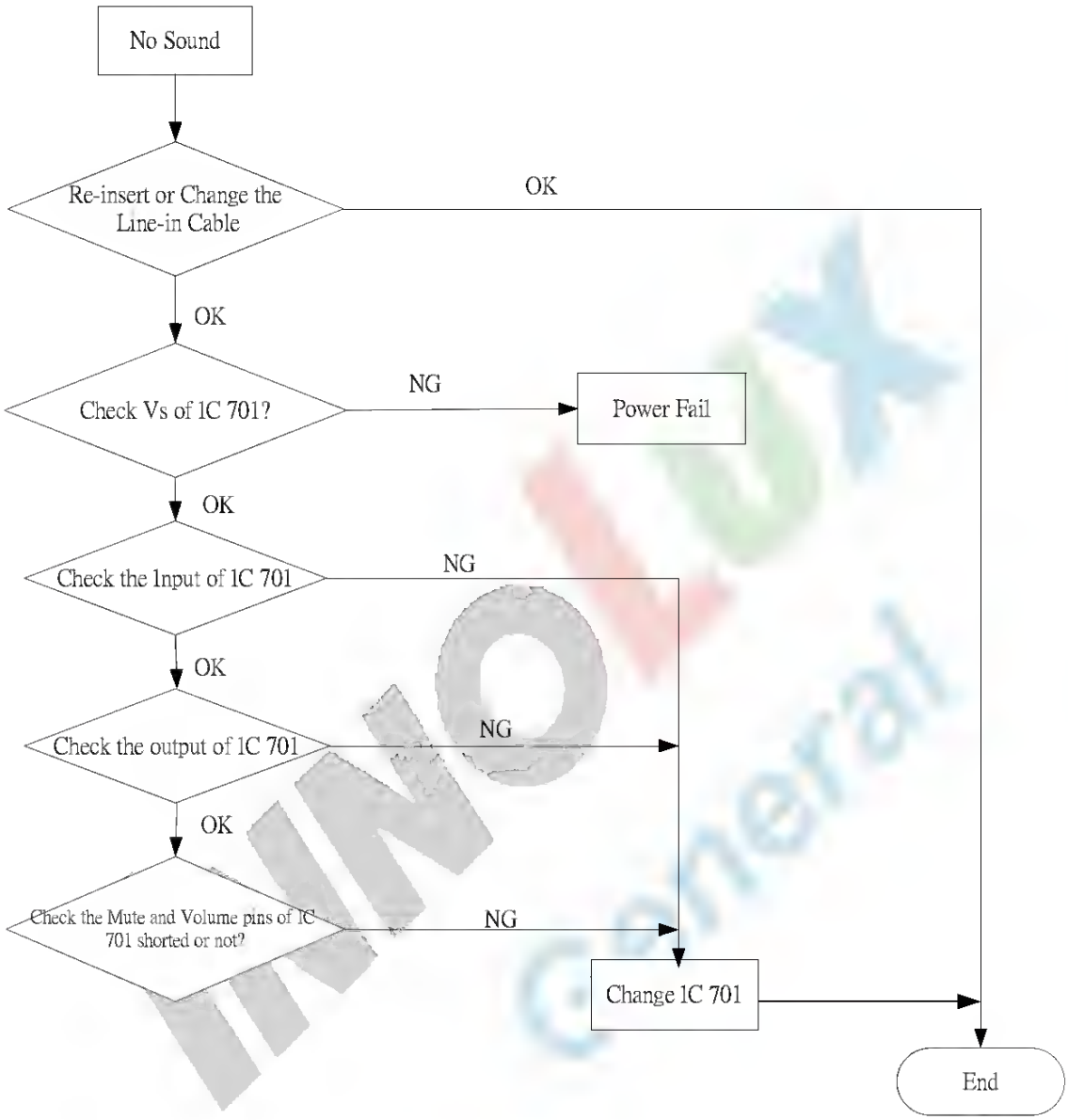
7 No Sound



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Attachment 1- Bill of Material

PCBA P+I

20060530

ITEM	P/N	Revision	Description	Supplier	Usage	Location
	790891401600R		PCBA,P/I BOARD, LE1941-642			
10	430300800560R	A	HRN ASS'Y 8P 60mm UL1007#24,RoHS	FOXCONN,GREATLAND,HEIGHTEN,	1	CN801,
20	430637020020R	A	WFR. 2P P=3.5mm 90°4100-D02 RoHS	FCN,FOXCONN,HEIGHTEN	4	CN501,CN502,CN503,CN504,
30	430631040070R	A	WAFER 4P 2.0mm 180°RoHSA2001WV2-4P	FOXCONN,HEIGHTEN,	1	CN701,
40	416202223610R	A	CAP MEY 2200pF 250V M Y2 Y5V P=7.5mm RoH	JNC,SUCCESS(SEC),TDK,	2	C802,C801,
50	416194743011R	A	CAP MEX 0.47uF 275V K X2,P15 RoHS	HJC,PILKOR,TEAPO,	1	C803,
60	420431014582R	A	CAP SEK 100uF/450V M,105℃ CF,18x35,RoHS	LELON,SU'SCON,	1	C804,
70	420424710260R	A	CAP SD 470uF/25V M 105℃ ST 10x16,RoHS	LELON,SU'SCON,	2	C501,C817,
80	416202224610R	A	CAP MEY 2200pF 400V M Y,P10mm RoHS	JNC,SUCCESS(SEC),TDK,	2	C805,C823,
90	416304724510R	A	CAP PP 0.0047uF 400V J,P5,RoHS	HJC,PILKOR,	1	C806,
100	418110058560R	A	CAP CD SL 10pF 3KV J,ST,RoHS CC45SL3PD10	JNC,SUCCESS(SEC),TDK,	2	C506,C523,
110	418103051910R	A	CAP CD NPO 3pF 3KV D,F7.5, RoHS	JNC,SUCCESS(SEC),TDK,	2	C528,C509,
120	420421020211R	A	CAP SD 1000uF 25V M,105℃ F 13x20 RoHS	LELON,SU'SCON,	1	C815,
130	420421020102R	A	CAP EC 1000uF/10V M,105℃ N-F 10x16(L-ES	LELON,SU'SCON,	1	C818,
140	411050070102R	A	DIO BRDG KBL405G 600V/4A(TSC) RoHS	TSC,	0	
140	411050050020R	A	DIO BRDG BL4-06-BF52-LF 600V/4A(FRONTIER	FRONTIER,	1	D801,
150	430613420290R	A	FUSE SLOW 2.250,Axial Lead,3.6 x10mm RoH	CONQUER,WALTER,	1	F801,
160	412140001390R	A	IC EL817M-B(EVERLIGHT)RoHS	EVERLIGHT,	0	
160	412140002380R	A	IC LTV817M-PR VDE (LITE-ON) P=10mm RoHS	LITEON,	1	IC801,
170	426000050070R	A	CHOKE L-FILTER 12mH LIN-007 ET-20,RoHS	NCE,TDK,	1	L801,
180	425000010530R	A	COIL CHK 5uH 7.8X10 CHK-053 0 181085R0L	CHILISIN FRONTIER,TDK,	2	L802,L803,
190	440149090220R	A	SKT AC 10A/250V U/C/V,G/Y=45mm TU-301-SF	TECX,ZJGHJ,	1	P801,
200	442299001130R	A	CON,PHONE JACK GREEN R/A,1P,PB 1303-2-A.	DLK,FOXCONN,	1	P701,
210	432009400701R	A	NTC 5Ω 4A 10φ P=5mm, F RoHS	OAKLAND,THINKING,	1	RT801,
220	415350683551R	A	RES MOF 2W 68KΩ J,MINI,HK17.5 RoHS	QUEENMAO,TZA1 YUAN,	1	R804,
230	415350278550R	A	RES MOF 2W 0.27Ω J,AT,MINI RoHS	QUEENMAO,TZA1 YUAN,	1	R805,
240	426000090550R	A	XFMR SW 600uH EE-28 SPW-055 ,DIP,RoHS	FRONTIER,NCE,TDK,	1	T801,
250	426000090680R	A	XFMR SW,121.5uH EEL19M DIP SPW-068,RoHS	DARFON,LISHIN,TDK	2	T501,T502,
260	412000225020R	A	IC TDA7496LK DIP-20(UTC)RoHS	UTC,	0	
260	412000225280R	A	IC TDA7496L AMPLIFIER(ST)RoHS W/DC VOLUM	ST,	1	U701,
270	790891441600R		PCBA,P/I BOARD,SMD,LE1941-642		1	
280	735100007300R	A	ASSY,H/S,AP2761 I-A,LP1906		1	
290	735100007120R	A	ASSY,H/S,SBR10U100CT/U40CT, LE1710		1	

20060516

ITEM	P/N	Revision	Description	Supplier	Usage	Location
	735100007120R	A	ASSY,H/S,SBR10U100CT/U40CT, LE1710			
10	411090041010R	A	SCHTKY SRF10100 100V/10A ITO220AB(TSC)Ro	TSC,	0	
10	411090099480R	A	SCHTKY SP10100C 100V/10A ITO220(WILLAS)R	WILLAS,	1	D803,
20	411090040010R	A	SCHTKY SRF1050 50V/10A ITO220AB(TSC)RoHS	TSC,	0	
20	411090024480R	A	SCHTKY SP1040C 40V/10A ITO220(WILLAS)RoH	WILLAS,	1	D805,
30	507200003800R	B	HEATSINK,56x20x10mm LE1904/05	DMC,ORIENTAL POWER,TOP RICH,	1	
40	509112306100R	A	SCREW,P,CROSS,T T-3*6,Zn	JING YI,LIQUAN	2	

20060420

ITEM	P/N	Revision	Description	Supplier	Usage	Location
	735100007300R	A	ASSY,H/S,AP2761 I-A,LP1906			
10	410050061130R	A	XSTR SPA07N65C3 N-CH PG-TO220- 3-31(INFI	INFINEON,	0	
10	410500059290R	A	XSTR AP27611-A N-CH TO-220CFM ADVANCED P	APEC,	1	Q804,
20	507300003500R	A	HEATSINK,52.8x20.2mm, LE1915 ROHS	DMC,ORIENTAL POWER,TOP RICH,	1	H801,
30	509112306100R	A	SCREW,P,CROSS,T T-3*6,Zn	JING YI,LIQUAN	1	

20060530

ITEM	P/N	Revision	Description	Supplier	Usage	Location
	790891441600R		PCBA,P/I BOARD,SMD,LE1941-642			
10	419311020060R	A	C SMD(0603) X7R 1000PF/50V K RoHS	DARFON,WALSIN,YAGEO	2	C510,C516,
20	419311020070R	A	C SMD(0805) X7R 1000PF/50V K RoHS	DARFON,WALSIN,YAGEO	4	C504,C505,C522,C529,
30	419311040060R	A	C SMD(0603) X7R 0.1uF/50V K RoHS	MURATA,TDK,	8	C503,C518,C519,C520,C825,C530,C703,C709,

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40	41930221036OR	A	C SMD(0603) NPO 220PF/50V G RoHS	DARFON,WALSIN,YAGEO	1	C812,
50	41931222007OR	A	C SMD(0805) X7R 2200PF/50V K RoHS	DARFON,WALSIN,YAGEO	4	C525,C513,C514,C527,
60	41931223306OR	A	C SMD(0603) X7R 0.022uF/25V K RoHS	DARFON,WALSIN,YAGEO	1	C511,
70	41934225367OR	A	C SMD(0805) Y5V 2.2uF/25V Z RoHS	MURATA,TDK,WALSIN,	3	C502,C507,C515,
80	41930331056OR	A	C SMD(0603) NPO 330PF/50V J RoHS	DARFON,WALSIN,YAGEO	1	C512,
90	41931472006OR	A	C SMD(0603) X7R 4700PF/50V K RoHS	DARFON,WALSIN,YAGEO	2	C711,C712,
100	41931474406OR	A	C SMD(0603) X7R 0.47uF/16V K,RoHS	DARFON,WALSIN,YAGEO	2	C704,C706,
110	41930680056OR	A	C SMD(0603) NPO 68PF/50V J,RoHS	DARFON,WALSIN,YAGEO	1	C521,
120	41931683006OR	A	C SMD (0603) X7R 0.068uF 50V,K RoHS	DARFON,WALSIN,YAGEO	1	C524,
130	41005007034OR	A	XSTR SSM9971GM DUAL N-CH,SO8(SILICON)RoH	SILICON,	0	
130	41050007029OR	A	XSTR AP9971GM,N-CH,SO8(APEC) RoHS	APEC,	2	U501,U502,
140	41200045563OR	A	IC OZ9938GN SOIC16(O2 MICRO)RoHS	O2,	1	IC501,
150	41050004509OR	A	XSTR MMBT3904 NPN SOT-23(PANJIT)RoHS	PANJIT,	0	
150	41050004514OR	A	XSTR MMBT3904LT1G NPN 200MA 40V SOT23(ON	ON SEMI,	0	
150	41050004513OR	A	XSTR MMBT3904 NPN SOT-23(INFIN EON)RoHS	INFINEON,	0	
150	41050004521OR	A	XSTR PMBT3904 NPN 200MA,40V SOT23(PHILIP	PHILIPS,	4	Q501,Q701,Q702,Q703,
160	41050004609OR	A	XSTR MMBT3906 PNP SOT-23(PANJIT)RoHS	PANJIT,	0	
160	41050004618OR	A	XSTR MMBT3906LT1G PNP 200mA 40V SOT23(ON	ON SEMI,	0	
160	41050004613OR	A	XSTR MMBT3906 PNP SOT-23(INFIN EON)RoHS	INFINEON,	0	
160	41050004621OR	A	XSTR PMBT3906 PNP 200MA,40V SOT23(PHILIP	PHILIPS,	1	Q803,
170	41491600005OR	A	RES SMD (0603) 0Ω J,RT RoHS	TA-I,WALSIN,YAGEO,	2	Q534,Q535,
180	41490401005OR	A	RES SMD (1206) 10Ω J,RT RoHS	TA-I,WALSIN,YAGEO,	2	R827,R828,
190	41491601015OR	A	RES SMD (0603) 100Ω J RT RoHS REV.A	TA-I,WALSIN,YAGEO,	1	R714,
200	41491601025OR	A	RES SMD (0603) 1KΩ J,RT RoHS REV.A	TA-I,WALSIN,YAGEO,	2	R709,R710,
210	41490801025OR	A	RES SMD (0805) 1KΩ J,RT RoHS REV.A	TA-I,WALSIN,YAGEO,	4	R813,R814,R820,R821,
220	41491610021OR	A	RES SMD (0603) 10KΩ F,RT RoHS	TA-I,WALSIN,YAGEO,	4	R513,R702,R703,R704,
230	41490801035OR	A	RES SMD (0805) 10KΩ J,RT RoHS REV.A	TA-I,WALSIN,YAGEO,	3	R812,R829,R830,
240	41491610031OR	A	RES SMD (0603) 100KΩ F,RT RoHS	TA-I,WALSIN,YAGEO,	2	R501,R520,
250	41491611031OR	A	RES SMD (0603) 110KΩ F,RT RoHS REV.A	TA-I,WALSIN,YAGEO,	1	R512,
260	41491601055OR	A	RES SMD (0603) 1MΩ J,RT RoHS REV.A	TA-I,WALSIN,YAGEO,	2	R526,R519,
270	41490812021OR	A	RES SMD (0805) 12K F RT RoHS REV.A	TA-I,WALSIN,YAGEO,	1	R815,
280	41491601525OR	A	RES SMD (0603) 1.5KΩ J,RT RoHS	TA-I,WALSIN,YAGEO,	1	R503,
290	41491602735OR	A	RES SMD (0603) 27KΩ J,RT,RoHS REV.A	TA-I,WALSIN,YAGEO,	2	R705,R708,
300	41491639001OR	A	RES SMD (0603) 390Ω F,RT RoHS	TA-I,WALSIN,YAGEO,	1	R528,
310	41490802015OR	A	RES SMD (0805) 200Ω J,RT RoHS	TA-I,WALSIN,YAGEO,	2	R817,R818,
320	41491602025OR	A	RES SMD (0603) 2KΩ J,RT RoHS	TA-I,WALSIN,YAGEO,	2	R711,R712,
330	41490803305OR	A	RES SMD (0805) 33Ω J,RT RoHS	TA-I,WALSIN,YAGEO,	4	R504,R505,R530,R532,
340	41490833001OR	A	RES SMD (0805) 3.3KΩ F,RT RoHS REV.A	TA-I,WALSIN,YAGEO,	3	R510,R531,R824,
350	41491633041OR	A	RES SMD (0603) 3.3M F RT RoHS	TA-I,WALSIN,YAGEO,	1	R507,
360	41491604715OR	A	RES SMD (0603) 470Ω J RT RoHS REV.A	TA-I,WALSIN,YAGEO,	5	R523,R524,R527,R529,R521,
370	41491647021OR	A	RES SMD (0603) 47KΩ F,RT RoHS	TA-I,WALSIN,YAGEO,	2	R514,R706,
380	41491647031OR	A	RES SMD (0603) 470KΩ F,RT ROHS	TA-I,WALSIN,YAGEO,	1	R518,
390	41491605125OR	A	RES SMD (0603) 5.1KΩ J,RT RoHS	TA-I,WALSIN,YAGEO,	1	R701,
400	41490851011OR	A	RES SMD (0805) 5.1KΩ F,RT RoHS	TA-I,WALSIN,YAGEO,	1	R822,
410	41491651021OR	A	RES SMD (0603) 51KΩ F,RT RoHS	TA-I,WALSIN,YAGEO,	1	R508,
420	41490851021OR	A	RES SMD (0805) 51KΩ F,RT RoHS	TA-I,WALSIN,YAGEO,	1	R823,
430	41490805145OR	A	RES SMD (0805) 510KΩ J,RT RoHS	TA-I,WALSIN,YAGEO,	4	R808,R809,R810,R811,
440	41491605625OR	A	RES SMD (0603) 5.6KΩ J,RT ROHS REV.A	TA-I,WALSIN,YAGEO,	2	R707,R713,
450	41491660431OR	A	RES SMD (0603) 604KΩ F,RT RoHS	TA-I,WALSIN,YAGEO,	1	R516,
460	41490806815OR	A	RES SMD (0805) 680Ω J RT,RoHS	TA-I,WALSIN,YAGEO,	1	R502,
470	41102004631OR	A	DIO 1N4148W-F 75V/0.15A(DIODES RoHS,SOD-	DIODES,	0	
470	41102004609OR	A	DIO 1N4148W 75V/0.15A(PEC)RoHS SOD-123	PANJIT,	0	
470	41102300402IR	A	DIO SN4148-LF 75V/0.15A SMD 1206 (FEC)Ro	FRONTIER,	5	D505,D501,D511,D512,D513,
480	41102002639OR	A	DIO BAV99,SOT-23(INFINEON)RoHS	INFINEON,	0	
480	41102002602OR	A	DIO BAV99-LF 350mW 70V SOT-23 (FEC)RoHS	FRONTIER,	0	
480	41102002621OR	A	DIO BAV99 350mW 70V SOT-23(PHI RoHS	PHILIPS,	6	D502,D503,D504,D507,D508,D50
490	41113155692OR	A	ZENER 5.6V 0.5W DDZ5V6B-F,SOD1 23(DIODES	DIODES,	0	
490	41110095692OR	A	ZENER 5.6V MMSZ5232A SOD123(PE C)RoHS	PANJIT,	1	ZD501,
500	41115039195OR	A	ZENER 9.1V MTZS05-9.1-G SOD-123 (MITSUBI	MITSUBISHI,	0	
500	41113159195OR	A	ZENER 9.1V 0.5W DDZ9V1C-F,SOD1 23(DIODES	DIODES,	0	
500	41110099192OR	A	ZENER 9.1V MMSZ5239A SOD123(PE C)RoHS	PANJIT,	1	ZD803,
510	41113151302 2R	A	ZENER 13V 0.5W DDZ13B-7,SOD123(DIODES)Ro	DIODES,	0	
510	41110141302 2R	A	ZENER 13V MMSZ5243A SOD123(WILLAS)RoHS	WILLAS,	0	
510	41110091302 0R	A	ZENER 13V MMSZ5243A SOD123(PEC)RoHS	PANJIT,	1	ZD804,
520	41490401025 0R	A	RES SMD (1206) 1KΩ J,RT RoHS	TA-I,WALSIN,YAGEO,	1	R819,
530	41200049584 0R	A	IC NCP1337DR2G SOIC-7(ON)RoHS	ON SEMI,	1	IC802,
540	79069141160 0R		PCBA,P/I BOARD,AI,LE1941-642		1	

20060525

ITEM	P/N	Revision	Description	Supplier	Usage	Location
	79069141160 0R		PCBA,P/I BOARD,AI,LE1941-642			
10	79069145160 0R		PCBA,P/I BOARD,AI/A,LE1941-642		1	
20	79069146160 0R		PCBA,P/I BOARD,AI/R,LE1941-642		1	

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ITEM	P/N	Revison	Description	Supplier	Usage	Location
	79069145160GR		PCBA,P/I BOARD,AI/A,LE1941-642			
10	41103206020R	A	DIO FR10-10-LF 1000V/1A AT(FRONTIER)RoH	FRONTIER,	0	
10	41102053090R	A	DIO PS1010R 1000V/1A DO-41(PAN JIT)RoHS	PANJIT,	0	
10	41102055330R	A	DIO MUR1100ERL AXIAL LEAD(ON) RoHS	ON SEMI,	1	D802,
20	41102201001R	A	DIO 1N4003 200V/1A DO-41(TSC)	TSC,	0	
20	41102052020R	A	DIO A02-LF 200V/1A R1(FEC)RoHS	FRONTIER,	1	D804,
30	41513018354GR	A	RES CF 1/2W 18KΩ J,AT,RoHS	QUEENMAO,TZAI YUAN,	1	R803,
40	41532016054GR	A	RES MOF 1/4W 10Ω J,AT MINI RoHS	QUEENMAO,TZAI YUAN,	1	R806,
50	41534010154GR	A	RES MOF 1W 100Ω J,AT MINI RoHS	QUEENMAO,TZAI YUAN,	1	R816,
60	41487035054GR	A	RES MG HV 1/2W± 3MΩ 3KV J,AT RoHS	QUEENMAO,TZAI YUAN,	2	R525,R506,
70	43040500000R	A	JMPR ROLL/KG D=0.6mm,AT,RoHS		832	J504,J509,J515,J516,J517,J518,J519,J521,J701,J702,J706,J801,J802,J803,J807,J811,
80	43040500000R	A	JMPR ROLL/KG D=0.6mm,AT,RoHS		884	J501,J505,J507,J508,J511,J512,J513,J514,J520,J704,J705,J707,J806,J808,J809,J810,J812,
90	43040500000R	A	JMPR ROLL/KG D=0.6mm,AT,RoHS		156	J506,J703,J804,
100	43040500000R	A	JMPR ROLL/KG D=0.6mm,AT,RoHS		208	J502,J503,J510,J805,
110	41102200321GR	A	DIO 1N4148 75V/0.2A AT (PHIL) RoHS	PHILIPS,	0	
110	41102200302GR	A	DIO 1N4148-LF 75V/0.15A AT (FEC)RoHS	FRONTIER,	1	D826,
120	49069140010GR	A	PCB,P/I BOARD, LE1939-X42	TAT CHUN,WELFARE,	1	
130	41503010654GR	A	RES CF 1/2W 1MΩ J,AT MINI RoHS	QUEENMAO,TZAI YUAN	2	R801,R802,

20060530

ITEM	P/N	Revison	Description	Supplier	Usage	Location
	79069146160GR		PCBA,P/I BOARD,AI/R,LE1941-642			
10	41831041363GR	A	CAP CD Y5V 0.1uF 50V Z,VT RoHS	JNC,POE,SUCCESS(SEC),	3	C810,C811,C822,
20	41821022033GR	A	CAP CD X7R 1000pF 500V K VT RoHS	JNC,POE,SUCCESS(SEC),	2	C814,C813,
30	42043160022GR	A	CAP EC 10uF 25V M,105℃ VT 5x11 RoHS	OST,SUSCON,TEAPO,	1	C713,
40	42043221043GR	A	CAP EC 220uF 16V M,105℃ VT 6.3x11,RoHS	LELON,SUSCON,TEAPO,	1	C701,
50	42042471023GR	A	CAP SD 470uF/25V M 105℃ VT 10x13,RoHS	LELON,SUSCON,TEAPO,	1	C702,
60	42043471043R	A	CAP EC 470uF 16V M,105℃ VT 8x12,RoHS	LELON,SUSCON,TEAPO,	2	C705,C707,
70	42026470023GR	A	CAP SH 47uF 25V M,125℃,VT, 6.3x11,RoHS	OST,SUSCON,	3	C807,C820,C827,
80	41623104153GR	A	CAP MEB 0.1uF 160V J,(RSB),VT RSBEC3100D	ARCOTRONIC,AVX,	1	C821,
90	41202200224GR	A	IC KA431AZ 1%,VT (FAIRCHILD) RoHS	FAIRCHILD,	0	
90	41202200230GR	A	IC AP431VL TO-92 1% VT (ATC) RoHS	ANACHIP,	0	
90	41202200284GR	A	IC TL431ACLPG TO-92 1% VT(ON)RoHS	ON SEMI,	1	IC803,
100	41007201337GR	A	XSTR 2SC1815-GR (T2SPF T) VT (TOSHIBA)Ro	TOSHIBA,	0	
100	41007201315GR	A	XSTR UTC2SC1815L-GR NPN TO92 (UTC)RoHS	UTC,	0	
100	41007201321GR	A	XSTR 2PC1815GR*1 VT (PHILIPS) RoHS REV	PHILIPS,	1	Q801,
110	41811203153GR	A	CAP CD NPO 12pF 1KV J,VT,RoHS	JNC,SUCCESS(SEC),	1	C826,
120	41814703853GR	A	CAP CD NPO 47pF 1KV J,VT RoHS	JNC,POE,SUCCESS(SEC),	1	C808,
130	41821013039GR	A	CAP CD X7R 100pF 1KV K VT RoHS	JNC,POE,SUCCESS(SEC),	1	C809,

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PCBA IF

ITEM	P/N	Rev	Description	Supplier	Usage	Location
	790691320600R	AA	PCBA,I/F BOARD,OTHRS, LE1939-642			
10	430631080070R	A	WFR 2.0mm 8P 180°4500-08 RoHS	FOXCONN,HEIGHTEN,	1	CN101,
20	443842024060R	A	CON,DVI-D RA 24+1P FEM.W/O SCR EW,QH1112	FOXCONN,ZJGHJ,	1	CN102,
30	440819015030R	A	CON,D-SUB,FEM 15P RA W/O SCREW DZ11AA1-H	DLK,FOXCONN,ZJGHJ,	1	CN103,
40	430631080130R	A	WAFER 2x4P 2.0mm,200PHD-2*4ST RoHS	FOXCONN,HEIGHTEN,	1	CN105,
50	420432200260R	A	CAP EC 22uF 25V M,105℃ ST, 5x11,RoHS	LELON,SUSCON,TEAPO,	5	C105,C133,C138,C142,C145,
60	432008010270R	A	XTAL 14.31818MHz HC-49US DIP 16pF 30PPM	HARMONY,TXC,ZGC,	1	X101,
70	420431010461R	A	CAP EC 100uF 16V M,105℃ ST 5x11(SK) RoH	LELON,SUSCON,TEAPO,	2	C101,C102,
80	420432210460R	A	CAP EC 220uF 16V M,105℃ ST 6.3x11 RoHS	LELON,SUSCON,TEAPO,	1	C108,
90	420431000260R	A	CAP EC 10uF 25V M,105℃ ST 5x11 RoHS	LELON,SUSCON,TEAPO,	2	C111,C144,

ITEM	P/N	Rev	Description	Supplier	Usage	Location
	790691340600R	AA	PCBA,I/F BOARD,SMD,LE1939-642			
10	4440990300308	A	CON, SMD 1.0mm 30PIN RoHS AL2309-A0G1Z	FOXCONN,P-TWO,	1	CN104,
20	419311040060R	A	C SMD(0603) X7R 0.1uF/50V K RoHS	MURATA,TDK,WALSIN,YAGEO,	24	C103,C104,C106,C107,C109,C127,C128,C129,C131,C132,C134,C135,C136,C137,C139,C141,C143,C147,C148,C149,C150,C151,C152,C156,
30	419314733060R	A	C SMD(0603) X7R 0.047uF/25V K RoHS	DARFON,TDK,WALSIN,YAGEO,	6	C112,C113,C114,C115,C116,C117,
40	419303300560R	A	C SMD(0603) NPO 33PF/50V J RoHS	TDK,WALSIN,YAGEO,	1	C125,
50	419302210560R	A	C SMD(0603) NPO 220PF/50V J RoHS	TDK,WALSIN,YAGEO,	1	C126,
60	419311054070R	A	C SMD(0805) X7R 1uF/16V K RoHS REV.A	MURATA,TDK,WALSIN,YAGEO,	1	C140,
70	419302200560R	A	C SMD(0603) NPO 22PF/50V J RoHS	TDK,WALSIN,YAGEO,	2	C153,C154,
80	411090005311R	A	SCHTKY B240A 40V/2A SMA(DIODES RoHS	DIODES,	0	
80	411090005011R	A	SCHTKY SK24A 40V/2A SMA(TSC) DO-214AC Ro	TSC,	0	
80	411090020410R	A	SCHTKY SKS20-04AT-G 40V/2A THIN SMA (MMC	MITSUBISHI,	1	D101,
90	411020047020R	A	DIO BAV70-LF 70V SOT23 (FEC) RoHS	FRONTIER,	0	
90	411020047210R	A	DIO BAV70 85V SOT23 (PHILIPS) RoHS	PHILIPS,	2	D103,D102,
100	432002312111R	A	BEAD CORE SMD0805)120Ω 300mA RoHS	CHILISIN,TAI-TECH,	1	FB101,
110	432002360012R	A	BEAD CORE SMD(0805)60Ω 800mA GBK201209T	CHILISIN,TAI-TECH,	4	FB103,FB104,FB105,FB106,
120	432002360140R	A	BEAD CORE SMD(0603)60Ω 600mA, GBK160808	CHILISIN,TAI-TECH,	3	FB111,FB112,FB113,

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130	410500075270R	A	XSTR AO3415 P-CH,SOT23(AOS) RoHS	AOS,	0		
130	410500044270R	A	XSTR AO3401L P-CH(ALPHA-OMEGA) SOT23 RoH	AOS,	0		
130	410500068290R	A	XSTR AP2305GN P-CH SOT23(APEC) RoHS	APEC,	1	Q101,	
140	410500046090R	A	XSTR MMBT3906 PNP SOT-23(PANJIT)RoHS	PANJIT,	0		
140	410500046130R	A	XSTR MMBT3906 PNP SOT-23(INFIN EON)RoHS	INFINEON,	0		
140	410500046180R	A	XSTR MMBT3906LT1G PNP 200mA 40V SOT23(ON	ON SEMI,	0		
140	410500046210R	A	XSTR PMBT3906 PNP 200MA,40V SOT23(PHILIP	PHILIPS,	2	Q102,Q105,	
150	410500045140R	A	XSTR MMBT3904LT1G NPN 200MA 40V SOT23(ON	ON SEMI,	0		
150	410500045130R	A	XSTR MMBT3904 NPN SOT-23(INFIN EON)RoHS	INFINEON,	0		
150	410500045090R	A	XSTR MMBT3904 NPN SOT-23(PANJIT)RoHS	PANJIT,	0		
150	410500045210R	A	XSTR PMBT3904 NPN 200MA,40V SOT23(PHILIP	PHILIPS,	2	Q106,Q103,	
160	410500050090R	A	XSTR 2N7002 N-CH SOT-23(PANJIT)RoHS	PANJIT,	0		
160	410500050130R	A	XSTR SN7002N N-CH SOT-23(INFINEON),RoHS	INFINEON,	0		
160	410500050210R	A	XSTR 2N7002,N-CH FET SOT-23 (PHILIPS)RoH	PHILIPS,	1	Q110,	
170	4157547250S0R	A	RP(0612)4 7K Ωx4 1/16W J 8P4R RoHS REV:A	TA-I,WALSIN,YAGEO,	3	RP101,RP102,RP103,	
180	4149163900I0R	A	RES SMD (0603) 390Ω F,RT RoHS	TA-I,WALSIN,YAGEO,	3	R169,R101,R107,	
190	4149160104S0R	A	RES SMD (0603) 100K Ω J,RT REV:A RoHS	TA-I,WALSIN,YAGEO,	1	R102,	
200	4149160235G0R	A	RES SMD (0603) 20K Ω J,RT RoHS REV:A	TA-I,WALSIN,YAGEO,	1	R105,	
210	4149160103S0R	A	RES SMD (0603) 10K Ω J,RT RoHS	TA-I,WALSIN,YAGEO,	3	R172,R106,R122,	
220	4149160102S0R	A	RES SMD (0603) 1K Ω J,RT RoHS REV:A	TA-I,WALSIN,YAGEO,	6	R157,R158,R159,R160,R161,R124,	
230	4149160472S0R	A	RES SMD (0603) 4.7K Ω J,RT RoHS	TA-I,WALSIN,YAGEO,	14	R108,R110,R123,R128,R146,R147,R148,R149,R150,R173,R174,R190,R191,R180,	
240	4149160000S0R	A	RES SMD (0603) 0Ω J,RT RoHS	TA-I,WALSIN,YAGEO,	5	R113,R116,R119,R170,R171,	
250	4149160101S0R	A	RES SMD (0603) 100Ω J,RT RoHS REV:A	TA-I,WALSIN,YAGEO,	25	R114,R117,R120,R125,R126,R127,R129,R130,R131,R132,R151,R152,R153,R162,R163,R164,R165,R166,R167,R168 R178,R179,R181,R192,R193,	
260	4149167509I0R	A	RES SMD (0603) 75Ω F,RT RoHS REV:A	TA-I,WALSIN,YAGEO,	3	R133,R134,R135,	
270	4149160222S0R	A	RES SMD (0603) 2.2K Ω J,RT RoHS	TA-I,WALSIN,YAGEO,	2	R136,R137,	
280	4149160100S0R	A	RES SMD (0603) 10Ω J,RT RoHS	TA-I,WALSIN,YAGEO,	8	R138,R139,R140,R141,R142,R143,R144,R145,	
290	4149160510S0R	A	RES SMD (0603) 51Ω J,RT,RoHS REV:A	TA-I,WALSIN,YAGEO,	1	R197,	
300	4120003728I0R	A	IC AS1117L-3.3TR-LF,SOT223(AIS EMI)RoHS	AISEMI,	0		
300	4120003720I0R	A	IC LD1117AL-3.3V-A SOT-223(UTC RoHS	UTC,	1	U101,	
310	4120003308I0R	A	IC AS1117L-1.8/TR-LF SOT223(AI SEMI)RoHS	AISEMI,	0		
310	4120003300I0R	A	IC LD1117AL-1.8V-A SOT223(UTC) RoHS	UTC,	1	U102,	
320	4120004354I0R	A	IC AT24C02BN-10SU-1.8 SOIC8 2K (ATMEL)Ro	ATMEL,	0		
320	4120004802I0R	A	IC M24C02-RMN6TP SO8(ST)RoHS	ST,	0		
320	4120004809I0R	A	IC CAT24C02WI-TE13 SOIC-8(CATALYST)RoHS	CATALYST,	2	U103,U104,	
330	4120004781I0R	A	IC TSUM56AL-1-LF PFQP100(MSTAR)RoHS	MSTAR,	1	U105,	
340	4120004861I0R	A	IC PS25LV010A-10SCE SOIC8(MSTAR)RoHS	MSTAR,	0		
340	4120004863I0R	A	IC PM25LV010A-10SCE SOIC8(PMC)RoHS	PMC,	0		

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340	412000373190R	A	IC SST25VF010A-33 4C-SAE,SOIC- 8(SST)RoH	SST,	1	U106,
350	412000279280R	A	IC M24C04-WMN6TP4K SOP8 (ST) RoHS	ST,	0	
350	412000479990R	A	IC CAT24C04WI-TE13 SOIC-8(CATALYST)RoHS	CATALYST,	0	
350	412000279480R	A	IC AT24C04N-10SU-2.7 SOP8 4K(A TMEL)RoHS	ATMEL,	1	U108,
360	411131556920R	A	ZENER 5.6V 0.5W DDZ5V6B-F,SOD1 23(DIODES	DIODES,	0	
360	411150356950R	A	ZENER 5.6V MTZS05-5.6-G,SOD-12 3(MMC)RoH	MITSUBISHI,	0	
360	411100956920R	A	ZENER 5 6V MMSZ5232A SOD123(PB C)RoHS	PANJIT,	8	ZD101,ZD102,ZD103,ZD104,ZD105,ZD106,ZD107 ,ZD108,
370	906140005700R	A	LABEL,BARCODE,BLANK,33x7mm, ROHS,FOR PCB	KAIDA,	1	
380	490691300100R	A	PCB,I/F BOARD, LE1939-X42	EXPRESS,SHENG HUA,WELFARE,	1	
390	411311020060R	A	C SMD(0603) X7R 1000PF/50V K RoHS	DARFON,TDK,WALSIN,YAGEO,	6	C157,C158,C159,C160,C161,C162,

PCBA KEY PAD

20060714

ITEM	P/N	Revision	Description	Supplier	Usage	Location
	790781500000R		PCBA,KEYPAD LE1954			
10	416020222540R	A	RES CF 1/4W 2.2KΩ J,AT MINI REV A RoHS	QUEENMAO,TZAI YUAN,	2	R901,R902,
20	430631080110R	A	WAFER 8P 1.25mm 90°RoHS 125MX-08LT	FCN,HEIGHTEN,JOWLE,	1	CN107,
30	411071003500R	A	LED LED G/Y 3x5mm(HONGTONG) RoHS	HONGTONG,	1	LED101,
30	411070055990R	A	LED G/Y 3x5mm 1259-7VGVYW/F14 -69(EVERL	EVERLIGHT,	0	
30	411070052990R	A	LED G/Y 3x5mm L 115VGYW L5 33 SZ(KINGB	KINGBRIGHT,	0	
40	430602980180R		SW TACT 5.65mm 160gf, 1P DIP ,ROHS	HUA-JIE,	5	SW101,SW102,SW103,SW104,SW105,
50	490781500000R		PCB,KEYPAD LE1954	TAT CHUN,WELFARE,	1	

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Attachment 2- Schematic

Project Name	(LE1939)AL1916W LCD Monitor

REVISION HISTORY

Date	Author	Version	Comments	Remark
2006-05-27	kidd zhang jonas yang warren wang	V01	First edition	

APPROVED TO RELEASE

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Document Number : 0921351089	SIZE : A4	APPRO BY :
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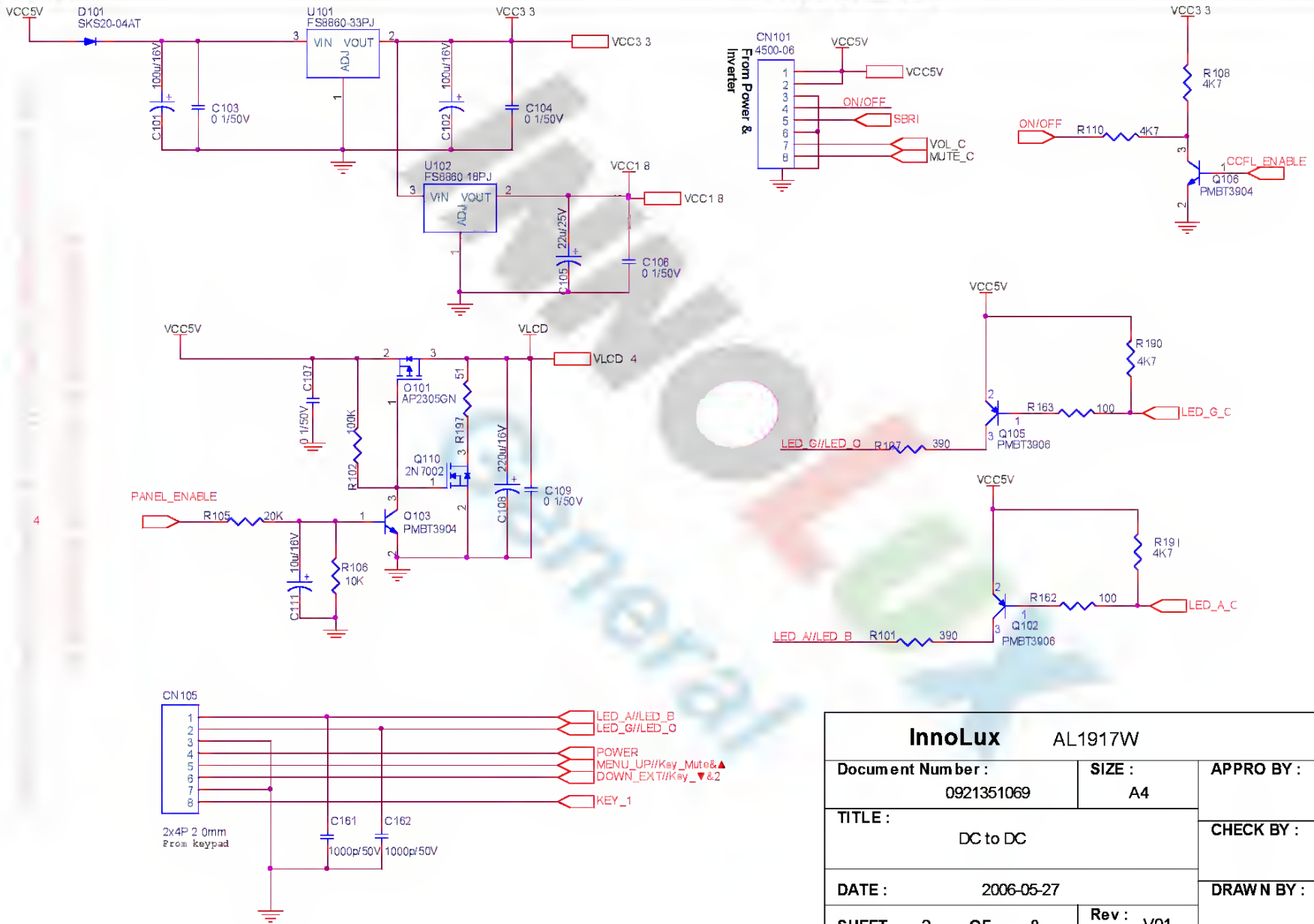

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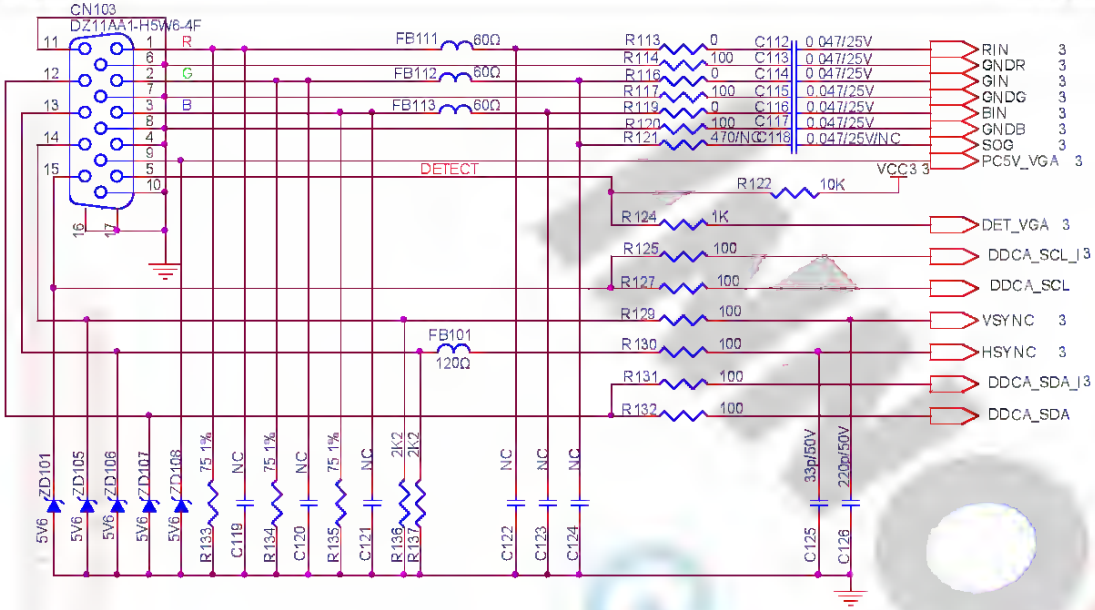

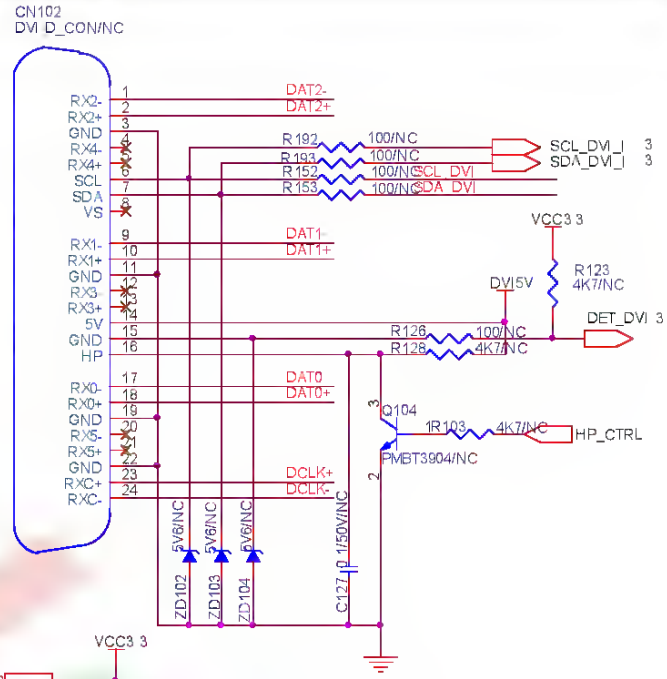

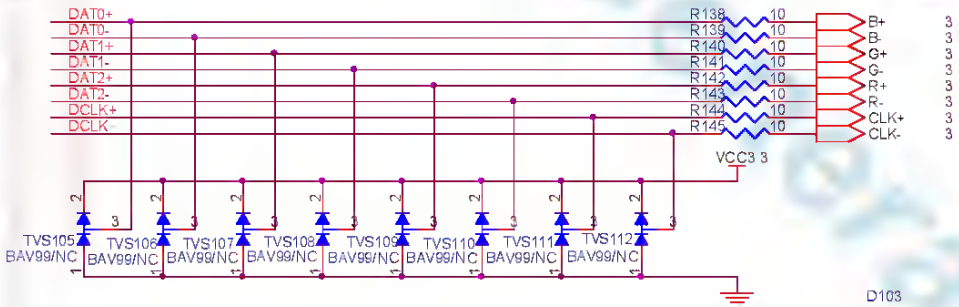

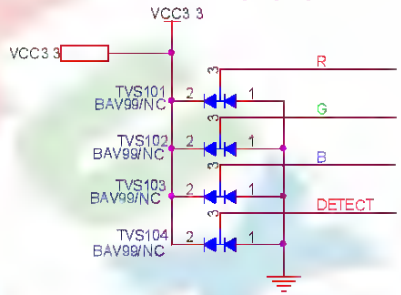

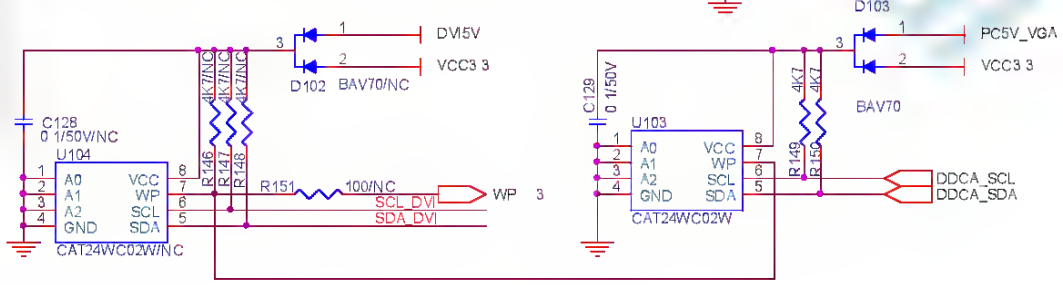

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SHEET 3 **OF** 8		**Rev :** V01	

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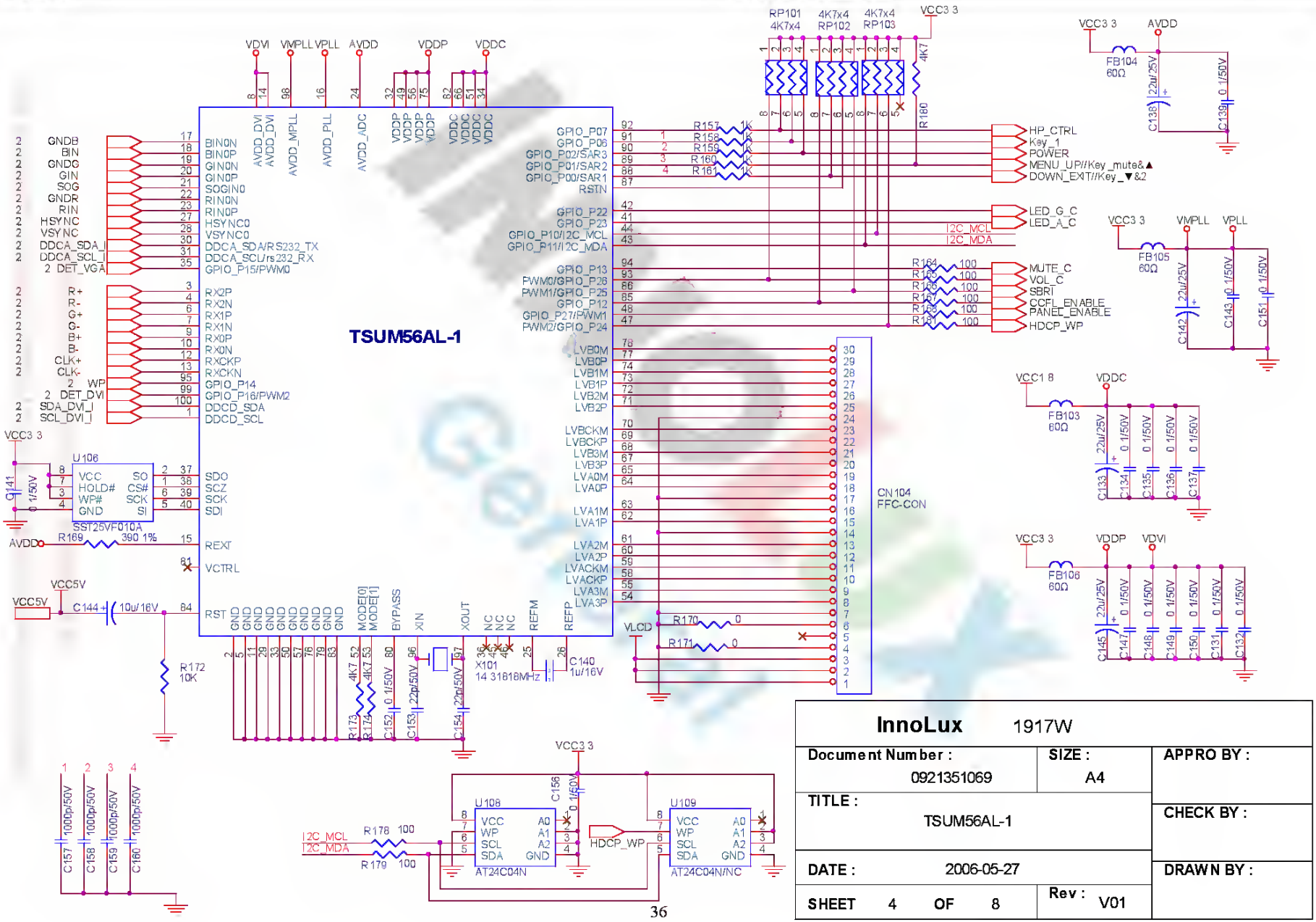

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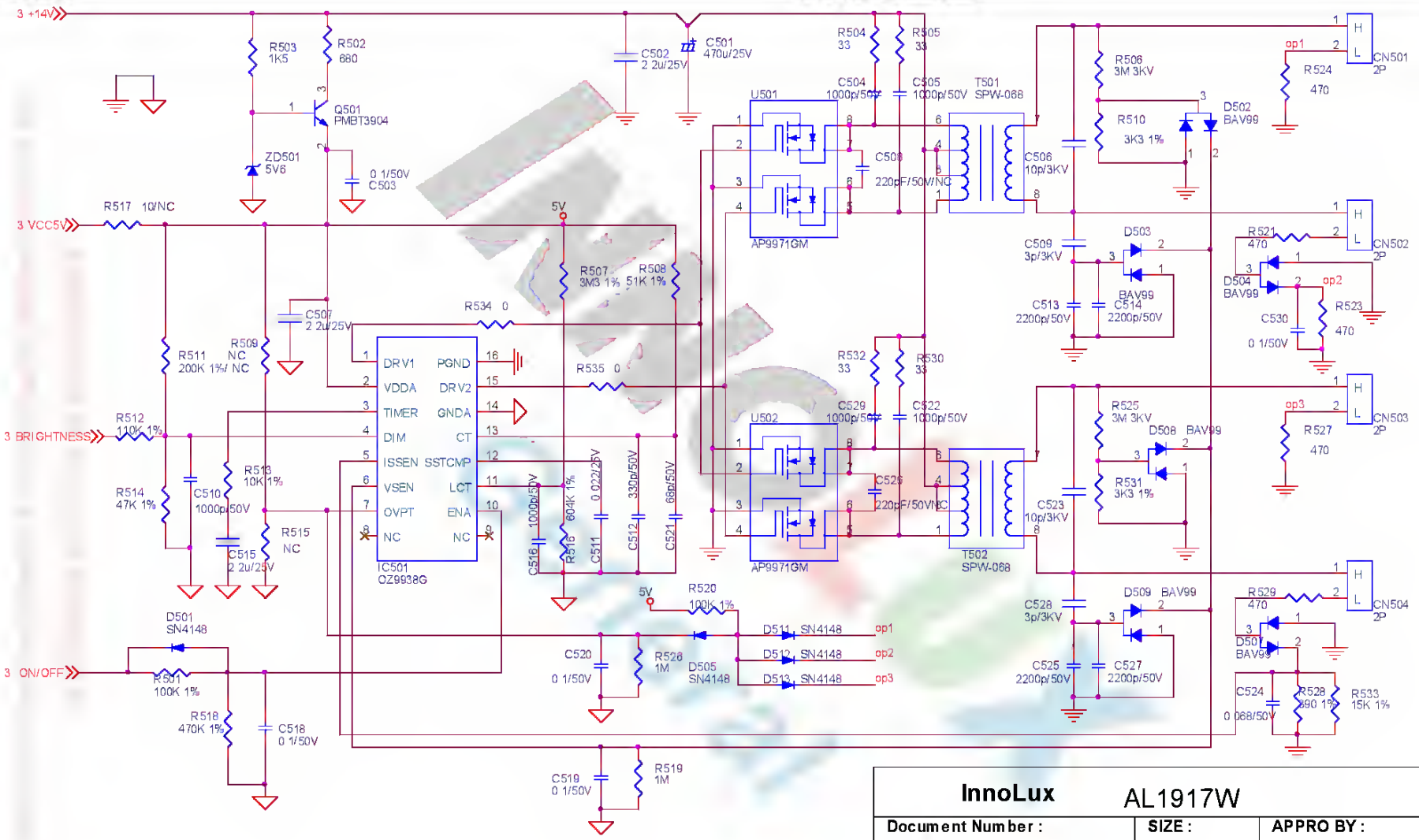

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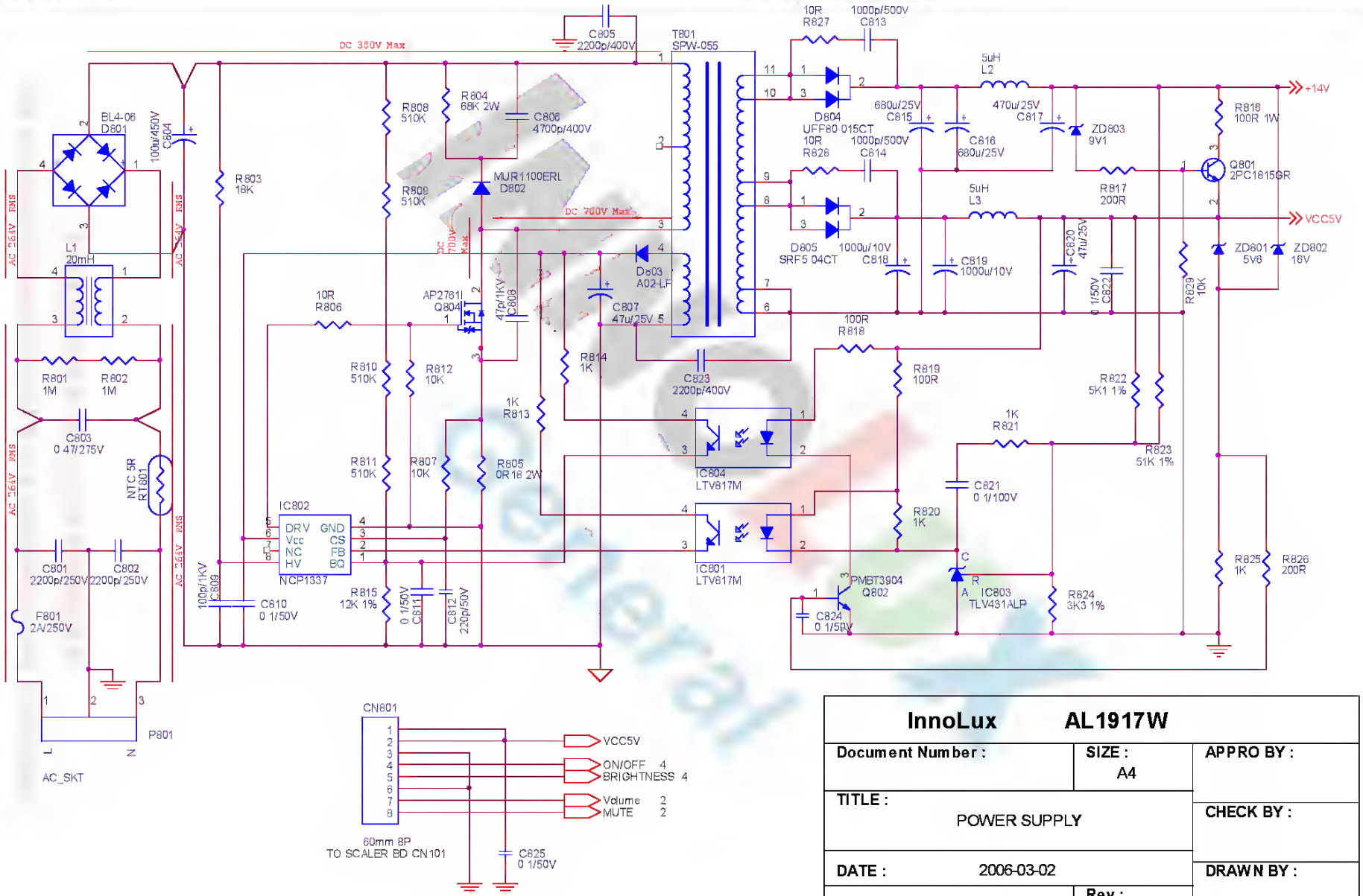

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Document Number :	SIZE : A4	APPRO BY :
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DATE : 2006-03-02		DRAWN BY :
SHEET 3 OF 4	Rev : V01	

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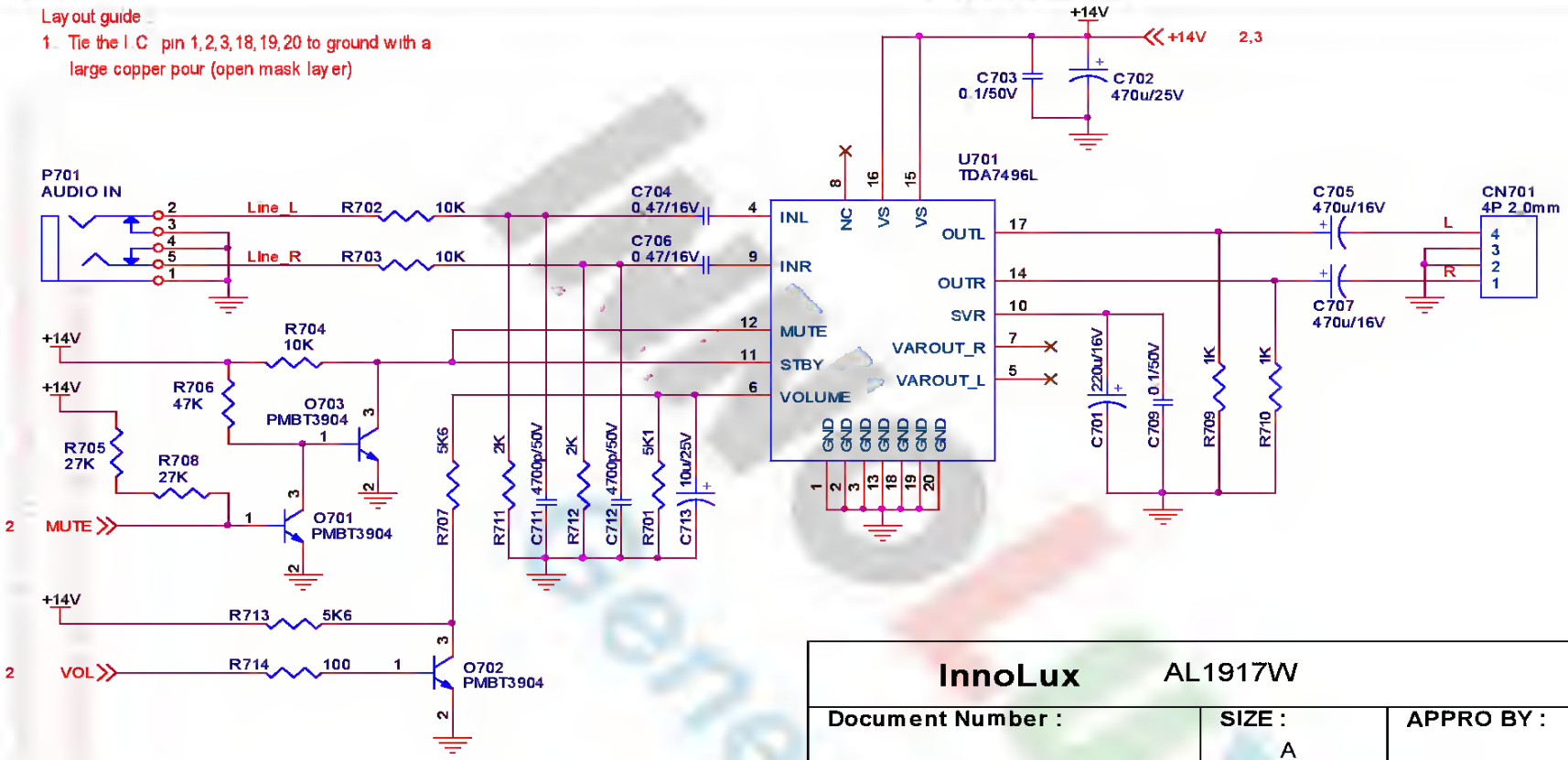
Layout guide
1. Tie the I C pin 1,2,3,18,19,20 to ground with a large copper pour (open mask layer)



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Document Number :	SIZE : A	APPRO BY :
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DATE : 2006-05-27		DRAWN BY :
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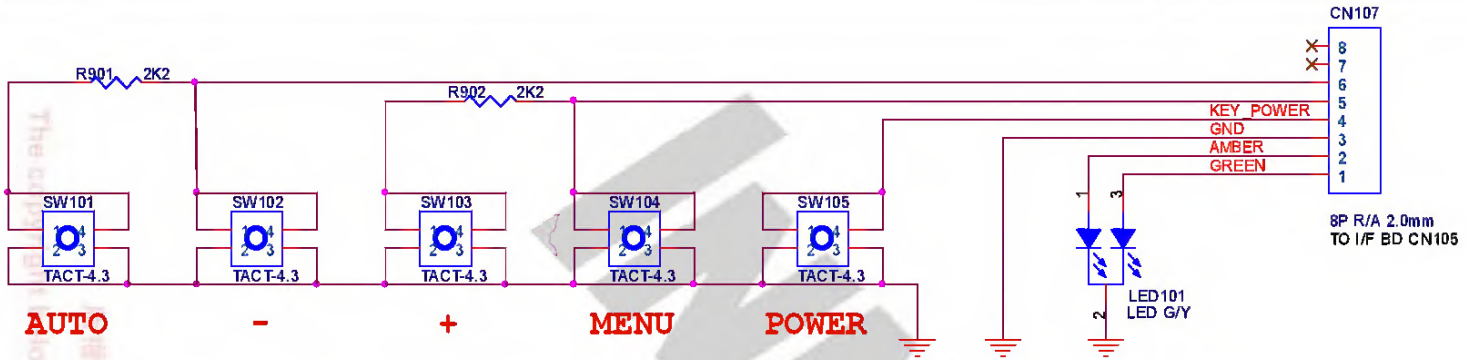

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TITLE : KEYPAD			CHECK BY :
DATE : 2005-05-27			DRAWN BY :
SHEET 7 OF 8		Rev : V01	

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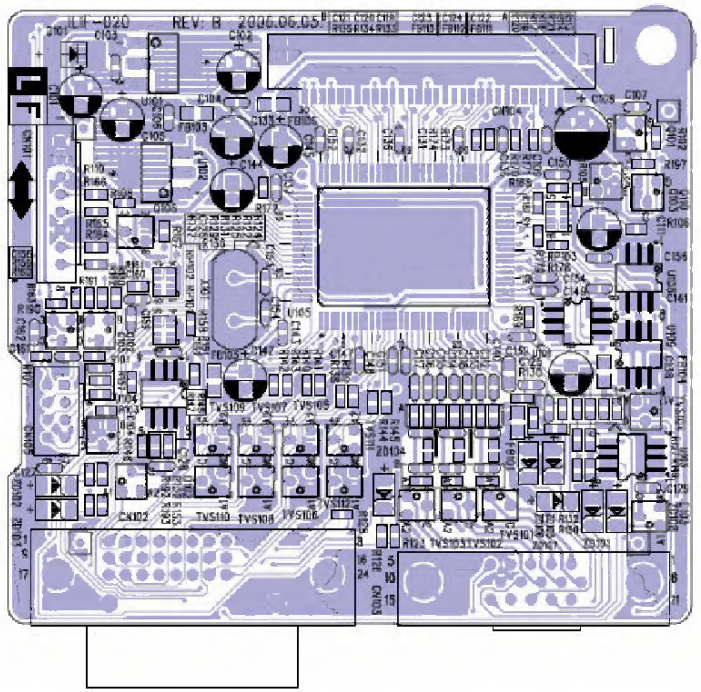
Attachment 3- PCB Layout

LAYER	SILKSCREEN TOP			
PCB NO :	ILIF-020	REV :	B	DESIGNER: HUA LIU
FILE NAME :	ILIF-020.PCB	DATE :	2006/06/05	

490691300100R



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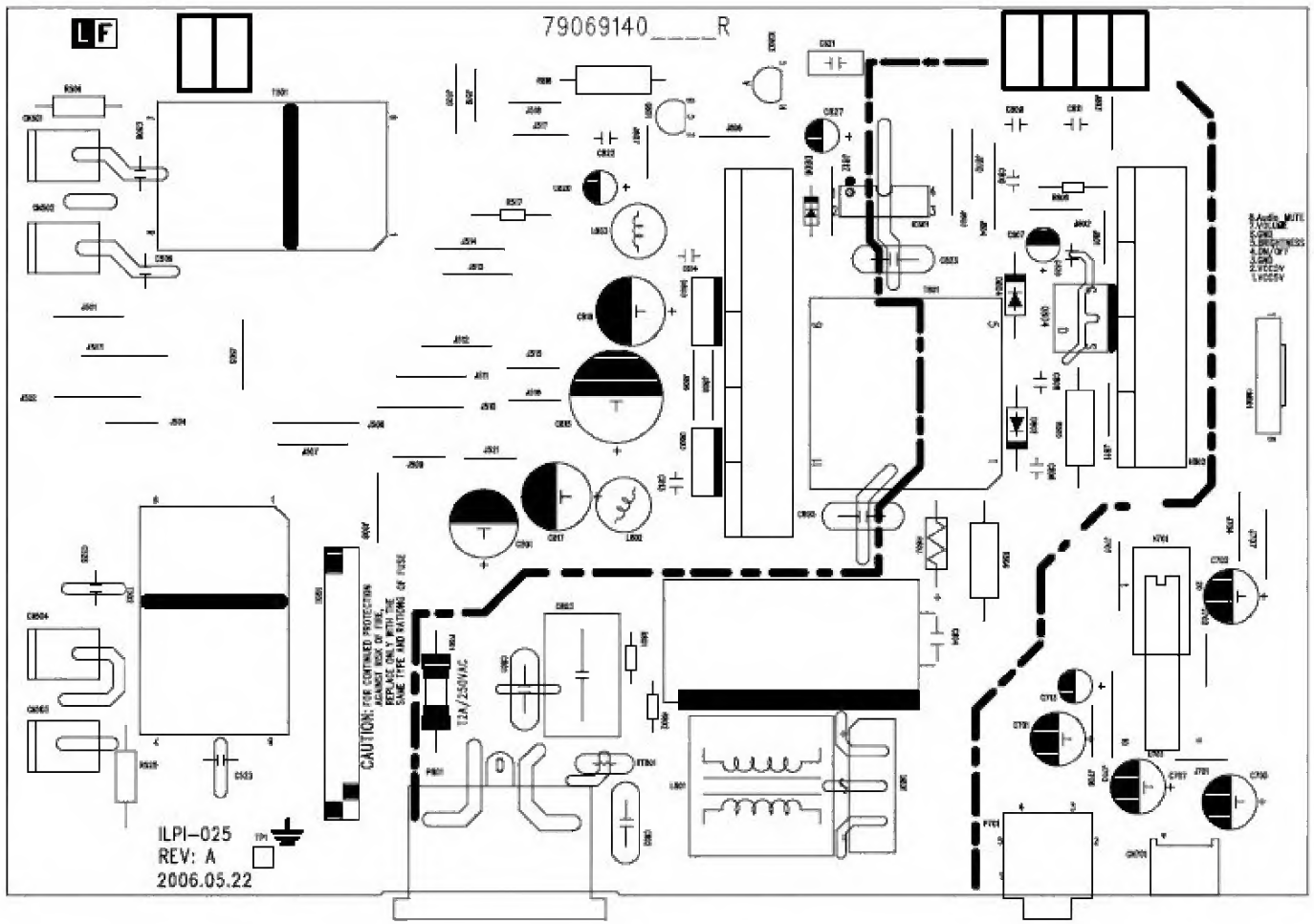

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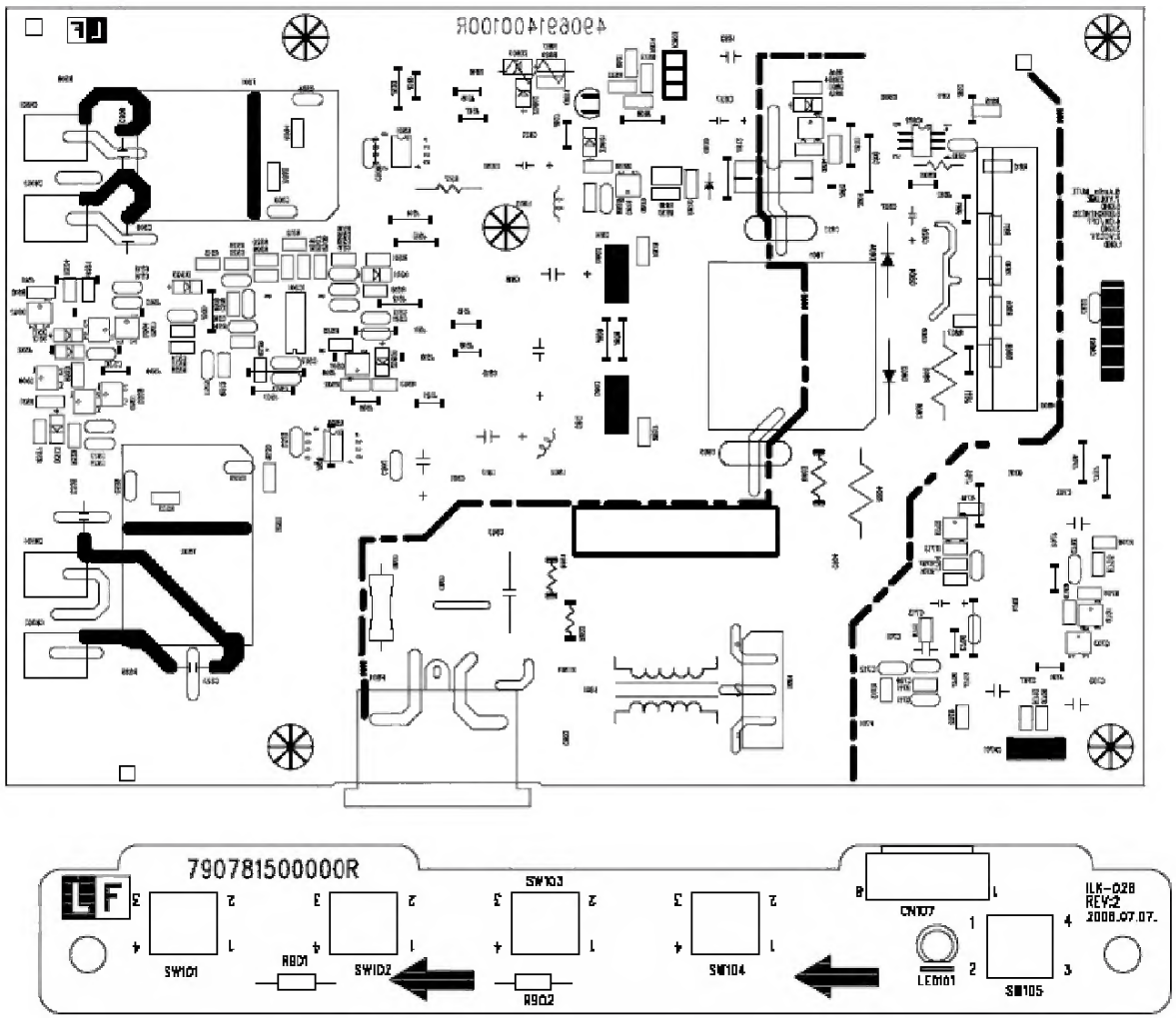

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